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RHEUMATIC HEART DISEASE

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Rheumatic heart disease is a disease of childhood. It rarely develops before five years and rarely after twenty years of age. The average age of its first appearance is about ten years.

The severity of its manifestations vary as to the intensity of the infection and the resistance of the patient. A pan-carditis can cause death or condemn its victim to a short life of chronic invalidism. On the other hand, many persons with a chronic rheumatic heart lesion have no symptoms and lead an active life without difficulty. It must not be forgotten, however, that these patients find themselves markedly handicapped if compelled to pass a physical examination previous to obtaining employment. The economic phase of this disease now becomes apparent.

The cause of rheumatic heart disease is rheumatic fever, which is now classified as one of the general circulatory system. It is now accepted that the heart is involved in more than 90% of all such cases. Such a percentage may not be demonstrable by the usual methods of examination, in fact, in rheumatic fever the heart may be involved and no murmurs demonstrable but electrocardiograms will prove the accuracy of these statements. At this time, reference is made to an article by McMillan and Nichols which can be found in the New Orleans Medical and Science Journal, November, 1931; to one dealing with the electrocardiograph findings published in the September 1, 1932 issue of Presse Medicale, and also, one by Levy and Turner in the Arch. Int. Med., February, 1929.

It is very easy to overlook a low grade rheumatic infection of the heart, with its remissions and exacerbations. It is to be remembered, however, that with each exacerbation, the heart is generally more damaged than would be expected from the clinical manifestations of the exacerbation. The final outcome of the exacerbations is heart failure.

The symptoms of rheumatic heart disease depend upon the activity of the infection, the obstruction to the circulation resulting from the specific lesions or the failure of the myocardium to meet the demand of circulation.

Strange as it may seen, pain is not a striking feature, even in severe pan-carditis unless the pan-carditis involves the pleura. While murmurs are important and helpful we cannot rely entirely upon their presence or absence. Disturbed rhythm may be an early or even the first manifestation of a carditis. The electrocardiograph is one of the most important aids at our disposal, especially in recognizing obscure rheumatic infections.

Often the clinical picture is that of a chronic low grade sepsis, suggesting tuberculosis, undulant fever, or chronic malaria. A complete investigation of the heart will clear the picture. Failure to gain weight, fatiguability, loss of appetite, digestive disturbance, a fever of low type, are the only reasons the parents give for seeking medical advice. It is well to recall, that a low grade rheumatic endocarditis may be present and last for weeks, months, and even years with only these symptoms just mentioned.

The blood picture is not striking. There may be a rapid anemia and leucocytosis during the acute phase of this disease and a W.B.C. count of 9000 or less, which persists far into the afebrile and apparent inactive phase.

Fever is an important symptom and a prolonged charting is often of great value. It ranges from 99 to 101 degrees F and when present, an active process is indicated.

Of still more importance, is the pulse rate. If persistently fast, even in the absence of temperature, it indicates the pro-

cess is still active and the case should be managed accordingly.

A history of joint, muscle, and fascia pains, sore throat, can be obtained in about seventy percent of the cases. An atypical lobar pneumonia, prolonged abdominal pain, skin lesions like erythema multiforme, acute nephritis, should be looked upon with suspicion in taking our histories.

The earlier in life the cardiac lesions develop, the more serious it is and the shorter is the patient's life. It is usual for the child to survive the first rheumatic infection. As a rule, these patients withstand two or three attacks or exacerbations of rheumatism and reach the age of 20 to 25 years with a variable degree of heart damage provided life is not cut short by some intercurrent infection.

No treatment for rheumatic heart is needed unless flutter, fibrillation, and congestive heart failure ensues. If infection is present, the treatment is directed to the cause of rheumatic fever.

At this time, references on rheumatic fever are presented for your consideration. Swift, J.A.M.A., June 22, 1929; Thayer, Edinburgh M. J., April, 1931; Burness, Arch. Int, Med., May 1932.

In addition to nursing care, rest in bed, the salicylates are most used. Broken doses every two hours until relief of symptoms and fever or toxic symptoms occur. Some clinicians are now using a grain per pound per day on alternate days rather than the continued daily medication of smaller doses. As soon as saturation is accomplished, maintenance doses are given for about thirty days. Instead of sodium salicylate, the writer has used in adults, sal ethyl carbonate with gratifying results and with no gastric symptoms. Opportunity for observing its use in children has not presented itself, as yet.

It is important to realize that long continued use of the salicylates may mask the symptoms of low grade infection, such as pain, fever, and leucocytosis. This is an observation made by White and many others.

There is some question as to the value of salicylate medication as a preventative of a cardiac lesion. Master and Romanoff in an article which appeared in the A.M. A.J., June 4, 1932, consider the salicylates only as most efficient analgesics and antipyretics. They found myocardial involvement in 100 per cent of their cases.

The opinion of Paul White that they are of demonstrable value is accepted by most clinicians. It has been recently shown that the simultaneous administration of magnesium sulphate or chloride in from 30-60 grain doses for an adult (proportional reduction for children), distinctly augments the action of the salicylates. Swift advises the substitution of amidopyrin for the salicylates. This substitution has received a marked endorsement by W. D. Stroud.

Serum therapy and roentgen irradiations of the heart have not met the approval of the profession at large.

The convalescent care of patients suffering from low grade rheumatic infection of the heart, has received much attention abroad, especially in England, where the condition is so prevalent. An excellent article on the "Organized Care of Patients with Acute Rheumatic Endocarditis," by Dr. M. J. Shapiro, appeared in an issue of the Minnesota M. J., May, 1931.

It is generally agreed that during the active stage, the patient should be kept in bed. Later, after withdrawal of the salicylates, the rectal temperature does not exceed 100 F., the white count below 9000, the pulse rate below 100, the patient gaining in weight and color and no signs or symptoms of infection found, we must consider the resumption of normal activities. At this time, it becomes a matter of judgment but it is well to bear in mind severe infection, prolonged convalescence. No hard or fast rule can be applied.

The location and removal of all foci of infection is important. One focus often overlooked is the ethmoid sinus. Remedial agents to build up body resistance are indicated. If possible a removal to a warm climate during the winter is advantageous,

The prevention of rheumatic heart disease can be accomplished only by the prevention of rheumatic fever. Regarding this disease, the following observations are presented for your consideration. (1.) It is more frequent in the colder, wetter parts of the temperate zones. (2.) A rheumatic familial history can be obtained in about one-third of the cases. (3.) It is more common in the crowded cities than in the country. (4.) Poor hygiene and poor environment favor its development.

(5.) It is a disease of childhood. (6.) It is mildly contagious.

Using these observations, Dr. Coombs approached this problem in Bristol, England, with sufficient success to attract the attention of the Minister of Public Health of Great Britain.

In this state, we do not have to contend with a cold, damp climate; we have no cities with overcrowded sunless tenements, therefore can concentrate our efforts upon the children. We should educate the public; we should use all the means at our command, toward the prevention rather than the treatment of rheumatic heart disease.

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GONORRHEAL ENDOCARDITIS—CASE REPORT WITH AUTOPSY*

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For a great many years bacterial endocarditis has captured the interest and fascination of clinicians, doubtless for the reason that there is no disease with a more varied symptomatology, all of the symptoms having a perfectly sound and rational pathological explanation.

The following case of gonococcus endocarditis is reported because of the relative rarity of the disease and the comparative certainty of the diagnosis.

History: The patient, a 25 year old white, married, oilfield worker, entered the hospital February 8th, 1932, complainting of progressive weakness, shortness of breath, swelling of the legs and fever.

Previous to the onset of the present illness the patient's health had been good, even though his occupation entailed strenuous exertion. He had frequent attacks of tonsillitis until three years ago, at which time he had a tonsillectomy. Seven years ago he contracted gonorrheal urethritis and since that time he had had an intermittent purulent discharge. No history of syphilis, rheumatic fever or of any pain in the joints could be obtained. Several months before admission to the hospital he had had a physical examination for life insurance and no abnormalities were found.

The patient's father and mother were living and in good health. His wife was living and well and there was one child, representing the only pregnancy, living and well.

The onset of the present illness was four weeks before admission to the hospital. It began suddenly with a chill, followed by high fever. The next day the patient noticed that his testicles were swollen. For the next two weeks he had a chill every afternoon, followed by fever and drenching sweats. The chills gradually became less frequent but the afternoon rises of temperature persisted. He had no edema until three days before admission to the hospital, at which time he noticed slight swelling of his hands, feet and face. He stated that throughout the whole month of his illness he had gradually been getting weaker, paler and more short of breath.

Examination: The patient was a fairly well nourished white man of 25 years of age. The temperature was 99.8 and the pulse 90. He was quite pale, extremely ill but having very little dyspnea. The skin was warm and moist and there was no petechiae. The pupils were equal and reacted to light. Examination of the eye grounds revealed normal discs and vessels. There were no areas of exudate or hemorrhages. The conjunctivae and oral mucous membranes were pale and showed no petechiae. There was marked pyorrhea alveolaris. The tonsillar fossae were empty. There was no general glandular enlargement. The neck veins were not distended to any significant degree but the pulsation of the carotid vessels was quite forceful.

The left side of the chest was fuller than the right and both sides moved well. Percussion revealed a normal note and the breath sounds were clear throughout. There were a few coarse rales in the left base, and on one occasion a friction rub was heard over the right lower chest in the axillary line. The heart was definitely enlarged, the left border extending 12 cm., to the left of the midline and the right border 4 cm. Over the entire precordium there was a loud blowing systolic murmur. In the second right interspace there was a blowing diastolic murmur which could be heard down the left border of the sternum as far as the fourth interspace, at which point it assumed a rumbling character. There was no increase in the intensity of the pulmonic second sound. The blood vessels were soft and compressible. The radial pulses were of equal volume and of the collapsing type. The blood pressure was 132-40.

The abdomen was full but there was no evidence of free fluid. The liver extended 5 cm., below the costal margin and was tender to pressure. The spleen could not be felt. There was a small amount of edema of the face, hands and legs. There was no evidence of epididymitis and there was no urethral discharge.

The white blood count was 19,400, of which 84% were polymorphonuclear leukocytes. The red blood cells numbered 2,900,000 and the hemoglobin was 53%. Except for an occasional hyaline cast the urine was normal. The non protein nitrogen was 40 mgm., per 100 c.c. of blood. Blood culture was sterile.

Course in Hospital: Throughout the patient's subsequent course in the hospital the temperature showed daily excursions from approximately 99 degrees to 103 degrees. He was irrational much of the time. He was digitalized by administering 1.2 gms. of the powdered leaf over the first two days and kept on a maintainance dose of .2 gm. daily. He showed no apparent benefit from digitalis, though he received the drug to the point of nausea. He was given one blood transfusion which halted for only a short time his progressive anemia. About two weeks after admission, the murmur over the apex became much more harsh and rumbling. Frequent inspection failed to reveal the appearance of petechiae at any time. Subsequent blood cultures were sterile. On March 1, 1932, twenty-three days after admission the patient suddenly died.

Autopsy: On opening the thorax the heart and

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lungs were found to occupy their normal positions and there was no free fluid in the pleural cavities. There were no mediastinal adhesions. The pericardial sac contained more than the normal amount of fluid. The endothelial lining was smooth and glistening. The heart was quite enlarged, particularly the right auricle and the left ventricle. On opening the heart the tricuspid, mitral and pulmonary valves were all normal. The aortic valve was almost entirely relaced by a mass of fresh, friable vegetations which extended a short way on the mural endocardium. At one place there was a perforation about 3 mm. in diameter through the vegetation close to the aortic ring.

Cultures of the heart's blood and culture of the valvular vegetations at the autopsy table proved to be sterile. However, a direct smear from the vegetation showed numerous gram negative, biscuit shaped diplococci.

In 1876 Marty[1] reported the first case of endocarditis due to gonorrhea independent of rheumatism, in an individual who had had clinical gonorrheal urethritis for six weeks. Following Neisser's demonstration of the gonococcus, Martin[2] (1882), Weichselbaum[3] (1887), and others demonstrated the presence of gonococci in diseased valves. However, absolute proof of the exact nature of the infection was lacking until 1897 when as Vaquez[4] remarks: "Lenharts[5], who with an unscrupulousness that is truly astounding, innoculated a healthy human urethra with bacteria obtained from a culture of endocarditic vegetations and reproduced a typical discharge."

Although gonococcal endocarditis is a relatively rare disease several series and occasional isolated cases have been reported in the literature at rather constant intervals since the discovery of the gonococcus. Kulbs[6] in 1907 reported 28 cases. Lion and Levy-Bruhl[7] in 1922 reported 58 cases. Thayer[8] reported 20 instances of the disease in 1922. Thayer's 20 cases occurred in a series of 176 bacteriologically proven cases of acute and subacute endocarditis. Thus in his series the gonococcus was responsible for 11.3% of all cases of bacterial endocarditis.

Anatomic Lesions: There is a general impression that the gonococcus has an especial predilection for the tricuspid valve. However, in Kulbs' 28 cases the left heart was affected twenty-six times, twenty times the lesion being aortic and in one case all the valves were involved. In Thayer's 20 cases the tricuspid valve was affected four times but in only one instance was it the only valve involved. In the 58 cases collected by Lion and Levy-Bruhl, the valve lesions were left sided in 48 and the aortic valve was involved in 35 of these. Thus the aortic valve is the most commonly affected but as in all acute ulcerative endocarditis the right side of the heart is affected more frequently than in subacute bacterial endocarditis most assuredly for the reason that the predisposing cause in about 80% of cases of subacute bacterial endocarditis is old rheumatic valvular disease, a condition which is almost universally left sided.

The anatomical lesions cannot be distinguished with any degree of certainty from those of other types of bacterial endocarditis. The vegetations are nearly always quite large, of a greyish color and very friable. Often there is extensive destruction of the valve and even perforation. The vegetations may extend on to the mural endocardium, into the sinuses of valsalva, and even destroy the chordae tendinae.

Diagnosis: In the last analysis the diagnosis depends upon bacteriologic evidence either from blood culture during life or culture and smears of the vegetation after death. As is well known the gonococcus is very difficult to culture, but it is possible with the proper type of medium. But even without bacteriological evidence the disease may be strongly suspected. The symptoms, like those of any acute bacterial endocarditis are simply those of a severe septicemia, in a patient who has or recently has had gonorrheal urethritis. The fever is of the septic type, perhaps normal or only slightly elevated in the mornings and 103 to 104 degrees in the evening with chills, sweats and delirium. A progressive anemia always occurs. The white blood count is usually between 15,000 and 40,000. Embolic phenomena are common, occurring in approximately two-thirds of the cases. They manifest themselves either as cutaneous and mucous membrane petechiae, or pulmonary infarcts depending on whether the left or the right side of the heart is the site of the vegetations. Emboli to the kidneys and to the brain occur occasionally. The heart is usually enlarged and the rate is quite rapid. The type and location of the murmurs depend upon the valve involved and the extent of this involvement. A murmur that can be heard to change from day to day is manifestly of the utmost significance,

Prognosis: Gonorrheal endocarditis is a malignant process nearly always pursuing a rapid and fatal course. However, the disease is not fatal in every case.

Silvestrini[9], Withington[10], Marfan and Debre[11], Dieulafoy[12], and Perry[13] have reported cases in which recovery ensued. All of these patients had or recently had had gonorrheal urethritis and exhibited the typical findings of an acute ulcerative endocarditis. In each case gonococci were isolated from the blood.

Treament: All types of treatment have failed. It is difficult to imagine benefit arising from the introduction of the various dyes in the blood stream in a disease in the course of which doubtless the blood spontaneously becomes sterile many times only to become reinfected from crumbling valvular vegetations teeming with organisms. And certainly no dye can penetrate the vegetations themselves. Digitalis has little, if any beneficial effect. However, the anemia can be combatted and this is best done with transfusions. Proper sedation and attention to general nutrition constitute the greater part of the treatment.

Summary: A case of acute ulcerative endocarditis is presented, the etiology of which was suspected during life and proved at autopsy.

The salient features of gonococcus endocarditis are briefly discussed.

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NEPHRITIS—AS SEEN IN THE LABORATORY*

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The history of nephritis dates back probably to Richard Bright, whose name is so often used when speaking of the disease. He gave his first papers at Guy's Hospital in London in 1827. At that time Pasteur, who did so much to bring about present day knowledge of bacteriology and laboratory findings, was but five years of age. In Bright's papers he pointed out the difference between edema and albuminuria and listed what we now call nephritis under two heads, the wet or acute and dry or chronic types.

The word "nephritis" is not a very satisfactory term from the laboratory standpoint, though on a whole preferable to any so far suggested. In strict sense it should mean inflammation while degeneration plays the more important part in the process under discussion. However, inflammation is the reaction to injury and includes degenerative changes as well as cellular infiltration. Yet, in the term "nephritis" we do not include such typical inflammatory lesion as renal suppuration. Fortunately the disease is quite sharply limited in a diagnostic sense and with the history, clinical picture and laboratory findings we can say with a good deal of certainty that a patient has or has not nephritis. This does not mean that there are not diagnostic pitfalls, but most of these disappear under careful and sufficiently prolonged observation. Rather than describing the various types of nephritis with condition and laboratory data for each, and as our time is limited, a rather generalized plan will be followed giving the laboratory point of view on different tests as this will save considerable repetition. Since nephritis disturbs renal function to a greater or less extent, it is desirable to begin with urine.

URINE

In all forms of nephritis the urine should contain albumin and is the most delicate indicator of pathologic changes in the kidney, although it tells little of its nature, extent, and seriousness. The amount of albumin eliminated in neph-

*Presented before Southeastern Oklahoma Medical Association, June 27, 1933.

ritis varies from minute trace to twenty grams or even more in twenty-four hours, and except in acute processes bears little relation to the severity of the disease. In acute and chronic parenchymatous nephritis, the quantity is usually very large, while in chronic interstitial nephritis it is small. On the other hand, albumin may be present even in considerable amounts in many conditions other than nephritis, a fact not well enough appreciated by the average practitioner.

An important feature of nephritis is a failure of the kidney to excrete normal solids which results in an accumulation of these substances in the body. Chief interest attaches to the nitrogenous waste products typefied by urea, and to the sodium chloride. Retention of urea is found in most cases of nephritis. In acute nephritis the amount of urea in urine is decreased. In the early stages of chronic cases it is usually normal while in late stages it is decreased. Hence, estimation of urea in urine is of little help in the diagnosis of nephritis. In the case of urea, retention is best measured by the exact methods of blood chemistry, and will be discussed at another place. Sodium chloride retention is generally associated with edema and is most typically seen in chronic diffuse nephritis. During a period of elimination of edema the sodium chloride is strikingly increased. The total volume of the urine likewise demands attention when nephritis is suspected, it being diminished in well defined cases in some forms and much decreased in others.

The specific gravity in acute nephritis is between 1.020 and 1.030; in chronic diffuse (parenchymatous) it is usually 1-.010 and 1.020, while in chronic interstitial nephritis it is 1.005 to 1.012.

Perhaps one of the most useful of all laboratory methods which aid in recognizing the disease and in following the progress of the individual cases when diagnosed are the various functional tests. They represent the advance in the study of nephritis. They should, however, be used with full appreciation that some of the function may be disturbed while others remain unaltered, and the efficiency of the kidney may be markedly impaired by various extra-renal conditions. Upon the other hand, owing to the reserve power of the kidney, their function is sometimes not much disturbed by actual organic disease until considerable damage has been done. Probably the best means of estimating renal function is the P.S.P. test. However, there is no necessary parallelism between P.S.P. excretion and blood nitrogen figures. Then we have the Mosenthal test meal with the variation in specific gravity taken every two hours. Here we should have at least ten points variation during the twenty-four hour period. Too, we have the water balance or water function test for the ability of the kidney to eliminate water, which is usually impaired in all types of acute or chronic nephritis. This impairment may appear to be most pronounced in those cases associated with edema. However, it is now recognized that failure of elimination of water may be had before there is any evidence of renal involvement. The edema of acute and chronic nephritis and nephrosis is largely due to a failure of elimination of chlorides and is probably due to an increased affinity of the tissue colloids for water, to sodium chloride retention in the tissue, to increased capillary permeability, or to a decrease in the colloid osmatic pressure of the blood plasma. All extra-renal factors must be taken into consideration when studying renal function on the basis of quantitative relationship between water supply and urine volume.

In the study of urine in nephritis, the microscope may reveal according to the variety of the disease, red blood corpuscles, usually in the form of "shadow cells," renal and caudate epithelial cells, more or less degenerated; a small or moderate number of pus corpuscles and the various kinds of casts, especially coarse granular, fatty, and blood casts.

BLOOD CHEMISTRY

It is to be remembered that nephritis is not a disease of the kidney alone but a generalized process with, as a rule, definite disturbances in the circulatory mechanism and changes in body metabolism. All of these contribute to changes found in the blood, consequently we do find considerable change in the composition of the blood when kidney function is disturbed. Within recent years through the work of Myers, Folin, Wu, and others, they have made possible an accurate determination of substances in small quantities of blood and hence we have been able in the clinic to make repeated estimates and follow changes that occur during the process of the disease. Through this work there has grown considerable knowledge of what we

term the blood chemistry of nephritis. At present the knowledge obtained through laboratory efforts is most complete in regard to retention products.

According to Widal, nephritis may be divided functionally into two forms, the chloremic or salt retention type, or acute nephritis where the chlorides are not fully eliminated and edema results, and the azotemic, nitrogen or urea retention type. Most authorities now agree that the kidney does not necessarily secrete urine, but filters it. When this filter is damaged and fails to eliminate normal concentration of urea and similar bodies, it must be retained in the blood, for these products are not threshold bodies and are always found in both blood and urine. Normally urea nitrogen represents approximately 40% to 50% of total non-protein nitrogen of the blood. Consequently, we usually look to the urea nitrogen to be increased first, and it is the one that has been most generally useful in our study of nephritis, even more so than the total non-protein nitrogen itself. We know that urea in the blood is the product largely of the protein taken in the diet together with addition from the breakdown of the products of tissue protein. The kidney normally filters out this urea which is the ash of the protein products. In the normal individual urea nitrogen is about 12 to 15 mgm. per 100 c.c. of blood. In speaking of urea and urea nitrogen we must bear in mind that the normal figures for urea is 2.14 times that of urea nitrogen. Blood urea is usually recorded in terms of urea nitrogen. It is in the chronic or dry type where we find the highest figures of urea retention. In acute nephritis urea retention is about normal in the beginning while a little later it is usually above normal. Figures of 25 to 30 mgm. are common. With unusually high figures we find it should suggest a previously existing chronic nephritis. Usually we have an increased blood nitrogen and decreased output of 'phthalein with severe toxic symptoms or uremia. This is not always the case, as there may be uremia convulsions with practically normal figures for both. This emphasizes the fact that no single test is a sufficient index of renal function.

With blood urea determination as with 'phthalein estimations it is the trend of repeated tests along with other disturbances in the patient which are useful and not the single test.

Much attention is being paid to the creatinin in blood in nephritis during the last few years. This substance is the one most easily excreted by the kidney and affected less by protein intake. Consequently, its increase in the blood stream is an indication of considerable renal insufficiency, normal being 1 to 2 mgm. Above 5 mgm. is usually indicative of death in a short time, except in acute nephritis with anuria. Usually very little change is found in creatinin until the urea finding be twice normal.

It might be mentioned that chloride is one of the "useful" blood substances and consequently has a threshold below which it is no longer excreted in the urine. In nephritis there may be a disturbance of this threshold. In acute nephritis we usually find a slight increase in the blood chlorides while there is edema. This falls to normal with the disappearance of the edema, but occasionally it rises without return of the edema. In subacute nephritis and in chronic nephritis with edema we find marked increase in blood chloride and this may continue to be high after there is any obvious edema.

Various degrees of acidosis occur in most cases of chronic nephritis when renal function is decreased and is termed as a retention acidosis. The acidosis in nephritis is due to a retention of acid phosphate. The excretion of this substance is a specific function of the kidney and does not in any sense parallel the excretion of nitrogen or sodium chloride. Some workers have found that with high blood phosphate there is a decreased blood calcium, and they suggest that the low calcium in the blood may have something to do with the production of hemorrhages and convulsions in severe nephritis. Acidosis more often is found in nephritis without edema, but may occur with edema if the end stages are uremic.

BLOOD SUGAR

It has been recognized for some time that many cases of severe nephritis show high figures for blood sugar. It has been shown that blood sugar levels may range from normal to 250 mgm. varying directly with the severity of the disease. Studies of sugar tolerance in nephritis show that in many cases there is a profound change in carbohydrate metabolism. The blood sugar curve after ingestion of glucose resembles the diabetic curve. With a marked interference with renal function, very small amounts of sugar or none appear in

the urine although the blood sugar may go over 200 mgm.

BLOOD COUNTS IN NEPHRITIS

Slight increase in leucocyte count is very often present in the earlier stages of acute nephritis and a differential count shows a slight polymorphonuclear cell increase. Any marked leucocytosis should always arouse the suspicion of the presence of some infection apart from the immediate cause of nephritis.

The average case of acute nephritis shows very little anemia, but with hematuria and a toxic condition moderate to fairly marked degree of secondary anemia may develop. The anemia is more striking in the chronic diffuse nephritis than in chronic interstitial nephritis, and if the red count falls below 2,500,000 it is considered of grave prognostic significance, indicating injury to the bone marrow. At first the hemoglobin red cell ratio is typical of secondary anemia type, but later the color index increases and will resemble that of pernicious anemia. However, it is noteworthy that many individuals with nephritis show a pallor quite out of proportion to the slight decrease in hemoglobin or red count. Occasionally this pallor takes on a sallow or lemon yellow cast suggestive of a hemolytic factor and still there may be no definite anemia demonstrable by blood counts or hemoglobin determination.

BASAL METABOLISM IN NEPHRITIS

Basal metabolism often is decreased in chronic nephritis with edema as well as in subacute nephritis. This group that shows a decrease in their metabolic rate show very little evidence of acidosis as measured by CO2 in the blood. In lipoid nephritis the metabolic rate is frequently as low as minus—20—30.

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A widely known Philadelphia physician who a few days ago ended his own life left an unusual kind of note for his wife.

Read this, and then draw your own conclusions: "It has been impossible for me to collect even the small bills owing me and rather than possibly cause some other person to prefer to take the same way out I would prefer that you make no attempt to collect my overdue professional accounts."

Quite remarkable, indeed that a man sorely pressed for money could on the brink of death have so great consideration for others who may possibly be in a similar position.

But that kindly doctor's act does recall what was said many years ago: "Greater love hath no man than that he give his life for a friend."—Philadelphia (Pa.) Inquirer, Nov. 6, 1933.

RENAL PATHOLOGY SEEN IN TOXEMIAS OF PREGNANCY

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For a long time I have been interested in the general problem of kidney disease in pregnancy. In the beginning it struck me that the various syndromes known as hyperemesis gravidarium, eclampsia, preeclamptic toxemia and nephritic toxemia all bore a close resemblance to certain clinical states seen in disturbances of the kidney. On studying the literature closely I have found that no real unanimity of opinion exists as to the true cause of any of these conditions, but that in all of them kidney symptoms play an important part. For instance, vomiting, albuminuria, hypertension, pus and blood in the urine, edema, retinitis, and oliguria are all seen in all the toxic states, sometimes more marked and sometimes less marked, but practically speaking always present. The vomiting cases may not show hypertension or pus in the urine, but generally do show albumin and often develop retinal changes. The eclamptic cases may not show hypertension or vomiting but usually do, and so on. The findings are common enough in any large series of cases, however, to point to a common origin for all toxemias, and that origin undoubtedly attacks the kidneys as soon as or before it does any other part of the body.

With this in mind I looked up the recorded autopsies in University Hospital and found three cases of pernicious vomiting and five cases of eclampsia. They showed the usual liver and kidney pathology: i.e., focal necrosis in the liver and tubular nephritis in the kidneys — and showed also a dilatation of the ureters and kidney pelves in six out of eight cases. With this data I began the urological study of kidneys in women coming into the hospital suffering from toxemia of pregnancy.

Last August I read a paper before the Southwestern Branch of American Urological Association reporting the kidney findings in a series of ten normal and fifteen preeclamptic or eclamptic cases. The findings were quite striking in that they showed predominant bilateral back pressure changes in each of the toxic cases, but only a unilateral change in the normal cases. Based upon these findings I predicated the following hypothesis as

to the causation of toxemias of pregnancy:

1. That the majority of pregnant women suffer from urinary back pressure with consequent reabsorption.

2. This condition produces: (a.) Normal morning nausea; (b.) Ureteral hypertrophy, which is completed at the end of the third month.

3. When ureteral hypertrophy is sufficient to carry on proper emptying, the nausea ceases.

4. When it is insufficient, the back pressure continues: (a.) To the same degree, causing lassitude, malaise, etc.; (b.) To a greater degree, with development of: (1.) Pernicious vomiting, or; (2.) Preeclamptic toxemia, or; (3.) True eclampsia, which is more or less sudden in onset.

5. Logically the remedy is to provide drainage for the urine thus impounded. If this can be done by conservative treatment well and good; if catheterization is necessary it should be used; if this is not possible, surgery should be resorted to.

Please remember that this is only an hypothesis, but at least is one which explains the known pathological facts of toxemias. It in nowise discounts the theory that purely nephritic women may suffer from uremic symptoms during pregnancy; nor does it exclude other sources of toxins such as the liver, the placenta, the pituitary gland, etc. So far as I know these structures may each give rise to toxic states, but at least I have seen no actual facts which could be interpreted as pointing to such an origin.

Today I wish to make a further report, totaling in all 13 cases of severe vomiting, 16 of preeclamptic toxemia and 11 of actual eclampsia. By actual eclampsia I mean pregnant women who became toxic and developed convulsions. The findings were the same as in the first series: i.e., in practically every case the ureters were elongated and tortuous or the kidney pelves showed more or less dilatation and blunting of calyces. To a urologist lengthening and tortuosity of the ureter means hypertrophy; and hypertrophy is a physiological response to increased work. Hofbauer, Stoeckel, Baird, Kretschmer, and other investigators have shown that there is an obstruction to the ureters at their lower ends during the course of most pregnancies. This is commonly accepted as the explanation for the development of pyelitis of pregnancy, many of which cases are accompanied by vomiting, hypertension, retinal changes or even convulsions, and are indistinguishable from the so-called preeclamptic or nephritic toxemias.

The cases of pernicious vomiting have not been X-rayed but were drained by retention catheters for one to three days and obtained relief within a week or less, thus verifying the work of Rush and strengthening my belief that pernicious vomiting is essentially only a symptom of urinary back pressure.

The cases of preeclamptic toxemia and eclampsia have shown essentially the same findings. In several instances one kidney was found to be in a state of spasticity and secreted nothing while the other showed a marked dilatation with the urine under high pressure. Five of them were seen only at autopsy, three were drained just prior to further operative procedures, four were drained for relief of convulsions, one was drained for relief of hypertension, while one was drained surgically for the relief of sepsis and jaundice, three were cystoscoped after delivery while the others were cystoscoped once for the purpose of diagnosis.

RESULTS

As stated above the cases of pernicious vomiting responded to treatment within a week and were completely relieved of their vomiting. Only two were delivered prematurely, one of which was an untreated four plus Wassermann and delivered an infant with syphilitic skin lesions. The other did not miscarry but was brought in and bagged prematurely because she had a placenta previa.

The 16 preeclamptic cases are all living and are as well as could be expected in view of the pathology which was present in their kidneys. Five of them miscarried as follows:

Case 1. Four months pregnant, deeply jaundiced, suffering from high fever, pus, blood and albumin in the urine, enlarged and tender liver, and rapid pulse. She was cystoscoped and ureters catheterized but drainage was insufficient on account of kinked ureters. She was then operated upon and a right nephrostomy was done, showing the kidney to be seminecrotic. Drainage being thus established she made an uneventful recovery and the jaundice and other symptoms cleared up. I took the tube out of the right kidney and she began

suffering from pain as soon as the opening closed. I then attempted to replace the tube, causing her considerable pain, and failing to get the tube in the kidney. She then miscarried at approximately six months. I have seen her since and she is apparently perfectly well, having no kidney symptoms.

Case 2. Seven months pregnant and was brought to the hospital suffering from albuminuria and hypertension. She had had two previous miscarriages and her family physician was afraid she would have another. She was catheterized and the catheters were left in two days. The blood pressure remained extremely high and on the third day she passed a dead foetus.

Case 3. Was cystoscoped at about seven months and miscarried one month later. She had had two previous miscarriages at exactly this same stage of labor. No Wassermann was taken.

Cases 4 and 5. Were cystoscoped in the outpatient department for hypertension and albuminuria. One of them had G. C. She miscarried four days after cystoscopy and six weeks prior to term. The other one miscarried nine days after cystoscopy and about six weeks prior to term.

Of the eleven cases of eclampsia five were seen only at autopsy, while six had uretheral catheterization. All were relieved of convulsions immediately in spite of the fact that no sedatives were given to two of them. In these water was withheld (Faye and Arnold), edema was reduced by magnesium sulphate and ureters were drained. Two patients who were at term delivered healthy babies a day or so after admission. Two others at term were delivered by operative procedures after being relieved. One case was at seven months, drained for four days, then delivered a premature infant which lived for a short time. She had had two previous miscarriages, was edematous and had a blood pressure of around 190 systolic. The other developed convulsions at six months, was catheterized for two days, was relieved, returned home and felt perfectly well for two months, then noticed that foetal movements had ceased and a week later delivered a dead foetus. Her blood pressure during these two months varied from 160 to 190 systolic, 120 to 150 diastolic. It dropped to normal ten days after delivery.

Summing up the entire matter, I have found that ureteral catheterization has relieved every case of severe vomiting of pregnancy which I have had an opportunity to observe or follow. These cases are ten in number. Pyelograms and autopsies of 27 cases of preeclamptic or eclamptic toxemias of pregnancy have shown definite evidence of the changes which are commonly produced by obstruction to the ureters. Such cases as I have had the opportunity to treat have shown more or less favorable results depending upon the thoroughness with which I was able to establish drainage. One case in which jaundice and hepatic involvement was a marked symptom was promptly relieved of her liver symptoms by surgical drainage of the worst kidney.

The mortality in the series of cases thus wholly or partially treated, prior to delivery comprising 29 toxic cases many of whom were very ill, has been zero for the mothers. There have been 8 premature deliveries, which appear in such cases as have been studied to have been due to placental infarcts or abruptio placenta. In most cases they happened at a period so remote from cystoscopy that no causal relationship could in fairness be assumed, while in others the mother gave a history of having miscarried twice before—due no doubt to her toxic state. None of the normal cases miscarried; only one of the vomiting cases did, and that one was syphilitic. Of the other seven, two were among the eclamptics and would have been aborted by the most conservative obstetrician, while of the remaining five, two had had two previous miscarriages when no cystoscope had been used, one miscarried apparently because her kidney wound closed up and I tried without success to reinsert a drainage tube. The other two were cystoscoped in our outpatient department probably without sufficient sedation. I do not know.

The percentage of miscarriages among the total group was 21%; among the toxic group was 27.6%, while among the preeclamptic or eclamptic group it was 36%. When it is remembered that all mothers recovered these figures compare quite favorably with the standard 20% maternal and 40 to 60 percent foetal mortality as given by DeLee and Williams. The maternal mortality of eclampsia in Oklahoma City has been 19% and the foetal mortality as near as can be determined accurately has been 44%, where complete data is available in University,

St. Anthony, and Oklahoma City General Hospitals. It would appear, therefore, that my series of cases gives a mother a 20% better chance of living and only shows 36% miscarriages as compared with 44% when treated by other methods. I feel very sure that in any large series of cases the foetal mortality would be much less than it is in this initial group.

Conclusion: Based upon the intensive study which I have given the matter and the observation of the cases mentioned in this paper, it is my opinion that a very high percent of all the toxemias of pregnancy are directly and entirely caused by urinary back pressure. Most of these can be and should be treated conservatively and without instrumentation. In any case, however, which does not yield to such conservative treatment a skilled urologist should catheterize the ureters and determine the condition of the kidneys. The results of his investigation can then settle whether ureteral catheters are sufficient or whether surgical drainage of the kidney should be employed. By following such a rational plan maternal mortality from this cause will be practically ended while foetal mortality no doubt will be greaty lowered.

TABLE I.

		Bilateral Back Pressure Signs
Normal Cases	9	0
Hyperemesis	13	13
Preeclamptic	21	18
Eclampsia	6	6
Total	49	37

TABLE II.

	Cases Drained	Maternal deaths	Foetal deaths
Hyperemesis	10	0	1 (Syph.)
Preeclamptic	13	0	5
Eclampsia	6	0	2
Total	29	0	8

WHICH COD FISH SHOULD BE USED FOR MEDICAL COD LIVER OIL?

"Zilva and Drummond[1] were the first to draw attention to the high vitamin value of oil prepared in Newfoundland, an observation that has been repeatedly confirmed."

"The figures for the estimations of vitamin A show that . . . . the Norwegian oils are the lowest; followed in increasing order by the Scottish, Icelandic and Newfoundland oils."

"The vitamin D tests also reveal the relatively high value of Newfoundland oil." "The northern fish grow more slowly than those frequenting the southern shores," (e. g., Newfoundland—due probably to the warmer temperatures of the Gulf Stream)—from "The Relative Values of Cod Liver Oils from Various Sources," by J. C. Drummond and T. P. Hilditch.

Mead's Newfoundland Cod Liver Oil and Mead's 10 D Cod Liver Oil with Viosterol are made from Newfoundland codfish exclusively.

1. J. Soc. Chem. Ind., 1923, 42, 185:205.

PREVENTION OF ENDEMIC GOITER*

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A discussion of the prevention of goiter hinges chiefly upon that type called endemic. The prevention and treatment is, in most instances, one and the same type. However, in a broader sense, it seems to me that one would surely have to consider along with these, those due to the lighting up of non-toxic or quiescent adenomas, and the precipitation of acute diffuse hyperthyroidism.

Although, in America, one does not see the end results of thyroid dyscrasia, such as have been perpetuated through numerous generations in Europe, most assuredly, this curse is steadily and insidiously on the march[1]. The great danger which may follow unchecked thyroid deficiency perpetuated through generations, is admirably pictured by Mayo in his visit to De Quervaine's Clinic in Berlin. He states that he saw two institutions which were built as farm houses, for cretins, containing 700 and 500 patients, respectively. They were all adults aged from twenty to sixty years. He describes them as a group of human animals, incapable of speech, and making inarticulate noises, showing their displeasure as would a dog. Some were playful, and many of them happy, for the world troubled them but little. They were able to do much of the work about the farms[2]. America is a new country, let this condition go for several generations without goiter prevention, and we will have a repetition of this tragedy as abroad. But we do not have to wait for these tragic end results, such as cretinism and deafmutism, for today we are paying the price in a great toll of incipient hypothyroidism. It is a definitely established principle that there are varying degrees in any deficiency disease; the milder grade producing less definite and more obscure symptoms than those present in the advanced stages. Hypometabolism is now recognized as a disease entity, and is known to exert a selective action on the various systems and organs of the body; thus, producing symptoms which are characteristic of, and easily confused with, other conditions. For instance, where the

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blood-forming organs are involved, we may have anemias. In connection with the intestinal tract, one may have digestive disturbances and constipation. Dysmenorrhea is a frequent sequence of the effects of hypo-metabolism upon the generative system. And so in children, mild deficiency may be the cause of behavior problems or a mild degree of mental inertia[4]. Many of these make up our mental defects and criminals of that type who are devoid of mental powers sufficient to think clearly enough to solve their problems in a social manner.

It is apparent that a consideration of the etiology of goiter might throw some light upon this social problem. Poor living conditions and defective hygiene are unquestionably an element in the production of goiter. Fresh air, sunshine, good food, and nice climate are good goiter prophylaxis. There have been attempts by Dr. Marcele Rhein of Strosberg, to establish a relation between avitaminosis and the production of goiter[3]. He has observed a number of soldiers affected with endemic goiter, and has found that goiter occurred almost exclusively among privates who ate a more or less restricted diet, while the officers and sub-officers who had greater freedom in the selection of their food, along with the civil population of the locality, all of whom had a common water supply, were not affected. It is his impression that a lack of vitamine A (fat soluble) is the factor which prepared the soil for the production of goiter. His contentions are further supported by the proposition that goiter does not occur in wild animals. But once they are placed in captivity without the freedom of choosing their foods, in many instances, they are observed to develop goiter.

Undoubtedly, there is much evidence pointing toward the part which infected waters play in the production of goiter. Much has been accomplished with regard to prophylaxis by giving our attention to the amelioration of potable waters in affected zones.

Shivers, in discussing the part played by the maternal influence, as an etiological factor in the production of goiter, sighted a family in which the grandmother, three of her daughters and two of her grandchildren had goiters. He further noted that this familial influence persisted in instances in which goiterous families left an endemic area and took up homes in other places, and their children born several years later, were found to develop goiter. These children of mothers from an endemic region having a predisposition to develop goiter did not show goiter symptoms at birth, but developed them during childhood.

The proposition that goiter is purely an iodine deficiency disease, although hardly tenable in the light of our present knowledge of the condition, has much to be said in its favor. A study of the geographical location, shows very definite areas where endemic goiters are prone to occur. Briefly, they are on the great water sheds of both east and west coasts, about the Great Lakes region, and a belt across the lower portion of the Mississippi Valley[4]. The peculiar location of these areas gives a possible hint as to the etiology of goiter. Is it possible that the years of constant drainage of these areas have taken from the soil certain essential elements of protoplasm, such as the salts of sodium, iodine, potassium and magnesium, and that a lack of available iodine in the environment has reflected upon the populace with the production of goiter; a hyperplasia of the gland, as a result of its attempt to produce sufficient iodine in the form of thyroxin, to meet the demands of metabolism?

Marine has shown definitely, the relation which iodine plays in thyroid hypertrophy, by his work on dogs. In his experiments he has shown that, following the removal of one lobe of the thyroid, if the iodine intake is restricted, a compensatory hypertrophy of the remaining gland results. This not being the case in the instances in which iodine was not restricted. Furthermore, a study of the iodine content in the thyroid gland in different pathological states, also points to the importance of iodine to the gland. The iodine content of the normal gland is .777 mg. per gram of fresh thyroid. In states of hyperplasia, it varies from .03 to .139. When, by the addition of iodine to the organism, a colloid or resting state is produced, the concentration is again raised to about .45 mg. of iodine per gram of fresh thyroid. Thus, it is shown that there is the least iodine per gram of thyroid, in the hyperplastic, or toxic states, and a progressively increasing amount in the moderately hyperplastic, or moderately toxic state[5].

Fundamental studies by Crile upon the thyroid, have shown the tremendous importance of this gland, in the relation it

bears between the animal and the vegetable kingdom. In no place in the vegetable kingdom is there a structure analagus to it.

The action of the thyroid, through iodine, by means of its agent thyroxin, is the activator of animal cell mechanics. This fundamental importance of iodine is shown by his work on preparations of cerebellum and medulla. He found that cells, when treated with iodine, were increased both in conductivity and permeability[8].

These few brief statements as to the etiology of goiter are, in many instances, contradictory, which only emphasizes the recognized fact that in the production of goiter, many elements are at play, and that this is a subject upon which there is much discussion and controversy, so much so, that one realizes that it is, practically, all speculation.

Some idea of the need of goiter prophylaxis in a given country, may be determined by a survey of the school children. This work, in many instances, has been accomplished by school physicians. In making this study, it seems there should be some standard by which the presence or absence of goiter in a given individual, can be determined. There is no hard and fast rule[9]. One or more lobes, and the isthmus should be quite easily palpable. A mere existence of a band of the isthmus, which can barely be palpated, seems to be no reason for saying that goiter exists. At the age of ten years, the necks of boys and girls are about alike. The outline of the muscles can be seen. At the age of fourteen, a girl has a rounded neck, made so by the developing of the thyroid gland. This is a normal condition, unless there are symptoms, or unless the enlargement is excessive. Occasionally, this condition is seen in a boy, and if so, the treatment is needed. After puberty, a girl may notice a fullness of the thyroid gland, which appears a few days before the period, and subsides soon afterward[10].

The prophylactic treatment of goiter may be directed both against the community, and the individual. The measures to be instituted against the community in general, are as before mentioned, good food, sunshine, fresh air and general hygiene. General measures should be directed particularly against sources of contaminated water. There are many instances on record where the abandonment of water, from infected sources with its goiter-genous tendencies, have changed the whole face of endemic communities[11].

The administration of iodine is, and probably will always remain, the keynote of goiter prophylaxis. In Europe, the distribution of iodine by means of iodized salt, has gained wide popularity. This method has not been found to be entirely satisfactory. If the addition of iodine to the salt is one part to 250,000, that concentration would probably be satisfactory in areas where the environmental deficiency is not great, while in other areas with lesser amount of iodine present in the environment, it probably would be ineffective. If higher concentrations are used, say up to one part to 125,000 or 1 to 100,000, those patients with idiosyncrasies to iodine, will immediately become affected. Furthermore, the blanket use of iodine in such concentrated doses has been found frequently, to light up quiescent adenomas. And another objection is that, undoubtedly, the best results have been obtained by the intermittant use of iodine. It is hard to conceive of a plan whereby trades-men could dispense this powerful medicine in an intelligent manner.

It seems to me that goiter prophylaxis aimed at the individual would give a more satisfactory result in the final analysis. Surely, goiter prophylaxis calls for a certain amount of diagnostic acume. For example, frequently, children are seen with fetal adenomas, and once these tumors are formed, iodine will not effect them. However, in this connection, one should mention that iodine given to the mother during pregnancy, will effectively prevent the formation of this type in the infant[12].

The management of the pregnant mother opens up another field. What may be accomplished by adequate management, from the thyroid standpoint, takes on some of the character and brilliance of the work done in toxemias of pregnancy. One must constantly keep in mind that cretinism may follow in the wake of low grade hypo-thyroidism. The basal metabolic rate of these women should be taken, and they should be carefully watched for dyscrasias of the thyroid gland. If a pregnant woman is suffering from hyper-thyroidism, she should be given iodine, that is, providing the toxicity is not of such a state, and violence, that operative interference is indicated. It is our opinion that those patients seen fairly early during pregnancy with a rapidly developing ful-

minating type of hyper-thyroidism, stand surgery well. It is rather generally agreed that women suffering from hypo-thyroidism should have both thyroid extract and iodine.".

Dosage. As to the direction of goiter prophylaxis against the child individually, there are several preparations of iodine which are satisfactory. The simple administration of two grains of sodium iodide, twice daily, for two weeks, twice a year, for children under fourteen years of age, is acceptable. This is a safe dose[11], Syrup of hydriotic acid is a convenient way of giving iodine. Iodosterine is another satisfactory preparation. It contains .1 gram and should be given once a week.

In certain instances of thyroid enlargement in children between the ages of approximately ten to fourteen years, during the period of adolescence, when there is a great demand upon the thyroid gland, the method of Plumer, by the use of small doses of thyroid extract and iodine, has given marvelous results[25].

CONCLUSION

The result of prophylaxis by means of iodine, stands out very clearly. Kimball's comparative study of the prevention of goiter in Detroit and Cleveland show that, with the unity of all health agencies, much can be accomplished if the disease cannot be completely eradicated. He takes for his comparison, the difference between the two cities, Detroit and Cleveland. In Detroit, cooperation was 100%. In Cleveland, this was not the case. Detroit and Cleveland had respectively 36% and 34% goiters in boys and girls. In 1930-31 Detroit had 3% and Cleveland, 18%. Many similar examples in Europe and America could be catalogued as a proof that iodine is a positive agent in preventing goiter, and thus eliminating the stigmata so apparent in all countries where the disease is endemic and of long standing.

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NEW PRODUCT FOR DIPHTHERIA IMMUNIZATION

The Squibb Laboratories announce the availability of Refined Diphtheria Toxoid Alum Precipitated with the featured advantage that one injection is sufficient for the immunization of the majority of children against diphtheria. The efficacy of the preparation in immunizing against diphtheria is believed to be due to the fact that the alum precipitated toxin since it is relatively insoluble, is more slowly absorbed and remains in the body sufficiently long to produce adequately protective amounts of antitoxin.

One injection of Alum Precipitated Toxoid is reported to be as effective as two or three injections of ordinary unprecipitated toxoid, and is also said to produce a greater number of negative Schick Tests, that is, a higher percentage of immune individuals. These features make Alum Precipitated Toxoid of particular value in public health work, for two or three times as many persons may be immunized with no more effort nor time on the part of the public health worker. It also makes it easier for the family physician to follow the advocated procedure of immunizing every infant, at whose birth he has officiated, at six months of age.

Squibb Refined Diphtheria Toxoid Alum Precipitated is prepared according to the method reported by the Alabama Board of Health for a single-dose treatment. It is marketed in 0.5 c.c. vials for immunization of one person, and in 5 c.c. vials containing sufficient material for the immunization of ten individuals.

ABDOMINAL PAIN IN PREGNANCY

Stuart B. Blakely, Binghamton, N. Y. (Journal A. M. A., Sept. 23, 1933), having found but two articles (in English) on abdominal pain in pregnancy, presents his clinical study of abdominal pain in 300 consecutive private obstetric cases. He deals only with the abdominal pain that is directly caused by or closely associated with the enlarging uterus or the pregnant state. He points out that abdominal pain in pregnancy may be classified as to anatomic origin, mechanism of production and location as felt by the patient. The anatomic origins may be grouped into (1) abdominal parietes, (2) uterus with contents and adnexa, and (3) extragenital organs and tissues. The pain may be of somatic or visceral origin and is caused chiefly by distention or contraction of the uterus; its source can usually be determined. Definite abdominal pain is complained of at some period by 85 per cent of pregnant women. The incidence of pain increases with each month up to the last, at which time there occurs a marked decrease. There is more pain in the lower than the upper part of the abdomen and in both more on the right side. Abdominal pain in pregnancy varies much in character and severity and is influenced my many factors. Pregnancy is not immune to any of the causes of abdominal pain.

BLOOD TRANSFUSION

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ENID

The history of the transfusion of blood is very interesting, but too lengthy to try to give in this paper. Anyone interested, can get a rather detailed account of it, together with the bibliography, in an article published in the Annals of Medical History, September, 1932, by Leo Zimmerman and Katherine Howell, Chicago.

Ancient peoples looked upon blood as the seat of living power. They apparently believed that it also carried with it the ability to restore youth, and also to impart the characteristics of the individual from which it came. It was used as baths, as medicine, and was also taken, not only in hopes that it might restore vigor, but that the recipient might in this way obtain the courage and other characteristics of the person or animal from which the blood was obtained. As far back as we have any records at all, man has had these ideas about blood.

The first transfusion of blood was supposed to have been done in 1490 on. Pope Innocent VIII, by a Jewish physician, but there is nothing to substantiate the story that any attempt was actually made to transfuse blood. Mangus Pegelius mentioned the possibilities in 1593. Andreas Libavius, in 1615, advocated blood transfusion, and described a technique for doing it. After Harvey's discovery of the circulation of the blood in 1657, the first human transfusion was done in London. The first successful transfusion of blood was done about 1665 in England by uniting the artery of one dog to the veins of another. The first human transfusion was done about 1666 by Jean Baptiste Denis, in which a human being was given blood from a lamb. Denis is supposed to have done several transfusions of lambs' blood on human beings, and some of them were apparently successful, but a great deal of controversy was caused by it and transfusions were prohibited by law in France, and also in Parliament some time later. After this, the transfusion of lambs' and sheeps' blood was tried at various places over the world, but opposition in some places by the medical profession, the authorities, and the church seems to have stopped it for over a century.

Professor Rosa experimented with blood transfusions on animals in about 1783. James Blundel of London, apparently in about 1834, found that exsanguinated animals could be resuscitated by a transfusion of blood from the same animal. He declared that human blood alone was fit for human transfusion. He found that people could be transfused with a syringe and even advised a syringe with three valves. He succeeded in resuscitating several women following severe post partum hemorrhage, and apparently performed, the operation about eleven times. He also states that the transfusion of blood from one species to another was liable to be followed by death after some days. Following this, considerable experimentation was carried on. Attempts were made to prevent the coagulation of blood, and transfusions were done with defibrinated blood. Edward Martin collected 57 cases of blood transfusion for post partum hemorrhage with 45 recoveries, in 1859. About this time knowledge began to be acquired in regard to the nature of blood itself and by 1875, there was considerable knowledge of the agglutinization of corpuscles of the blood, by mixing the blood of different species. In spite of this, in the latter part of the last century, there was again considerable use of animal blood, especially sheep blood, and its use in almost every conceivable type of disease. About 1880, salt solution came into use, and attempts of transfusion of any kind became rare.

Blood has been transfused in many ways; by the direct anastomosis of the blood vesels of the donor to the patient; by the use of the Crile cannula; the paraffin coated vessels of Curtis and David; the Kimpton and Percy tubes, and the Lindeman multiple syringe method. Various chemicals have been used to prevent coagulation. In 1914, Hustin of Belgium advocated the use of sodium citrate. We have, ourselves, tried four of them; the Percy tube, ordinary syringes, Lindeman syringes, and citrated blood. There is considerable disagreement about the method of choice, but we think the citrate method is much simpler, surer, and as efficient, and no more dangerous than any other. In the cases to be reported, this method was used.

It is obvious that careful selection of donors is necessary to eliminate the only great source of danger in blood transfusion. The donors are typed and those cor-

responding to the patient's classification are then matched with the patient's blood. Landsteiner, in the year 1900, demonstrated the presence of iso-agglutinins and anti-agglutinins in human blood. From Landsteiner's observations Jansky, in 1907, and Moss, in 1910, classified individuals according to the iso-agglutinins, placing them into four blood groups, designated as group 1, 2, 3, and 4. Group 2 and 3 are identical in the two classifications, but group 1 in Jansky's classification corresponds to group 4 in the Moss classification, thus the two classifications become confusing at times. To avoid further confusion, the societies of American pathologists, immunologists, and bacteriologists adopted an official classification in which blood is grouped according to the A and B iso-agglutinin contents of the red cells. In view of priority, the classification was named for Landsteiner. Red cells containing iso-agglutinin A are designated as group A, corresponding to Jansky class 2, and Moss class 2. Those containing iso-agglutinin B are designated group AB, and correspond to Jansky class 3, and Moss class 3. Cells containing both iso-agglutinins A and B, are designated as group AB ,and correspond to Jansky class 4, and Moss class 1. Cells containing no iso-agglutinins are designated as group O, corresponding to Jansky class 1, and Moss class 4.

When typing and matching blood, there are certain sources of error to be guarded against, such as contaminating blood with that of another group, cold or auto-agglutination and rouleaux formation which may be mistaken for agglutination. Occasionally, blood may contain iso-hemolysins, but when present it usually goes hand in hand with iso-agglutinins; that is, serum containing iso-hemolysin will cause hemolysis of the red cells of the same group or groups which the iso-agglutinin of that serum will agglutinate. The agglutinin titer varies considerably among individuals and at different times in the same individual, so this, at times may be a source of error if high titer sera are not used for typing. Direct matching of blood will eliminate this source of error. The iso-agglutinins are established in the blood during the first two years of post-natal life and remain so throughout the span of life. Care should be exercised in grouping infants under two years of age, because the group characteristics may not be fully developed. There are occasionally encountered, individuals belonging to the same blood group, who are incompatible when directly matched, so this procedure should be carried out except in extreme emergencies where time is a factor in saving a patient's life.

Since it was found that there was an agglutination of the red cells with the serum of different individuals, there was a tendency to attribute all of the complications of transfusions to this cause. However, there are numerous other causes. There are mechanical causes that can easily be accounted for. Agglutination of the donor's red cells is considered to be the cause of shock at the beginning of the transfusion. This theory has been generally accepted, although there are objections. In the first place, incompatibility of bloods as shown by Burham[1], Grove and Crum[2], and others, does not always cause shock, and on the other hand, reactions may occur in spite of the absence of iso-agglutination. In addition, the re-injection into the same individual of his own red cells may cause a reaction. The hypothesis of the existence of more than four groups has been advanced. According to another hypothesis, there may be an incompatibility of the blood platelets or of the leucocytes. It is known that the recipient's serum may become hypersensitive to a doner's blood and subsequent transfusions from the same donor have caused serious reactions, and some deaths have been reported. Subsequent transfusion from the same donor should be preceded by tests to determine hypersensitivity.

Sodium citrate has been considered to be non-toxic in the doses in which it is used as an anti-coagulant, although Le-Blaye[3] has observed chills following the injection of two grams of this substance. The water used as solvent, when not freshly distilled and not of highest purity has been reported as a cause of reactions.

We believe there is another cause of reactions, and that is the grade of anemia. Patients showing marked degenerative grade of anemia without microscopic evidence of red cell regeneration, are prone to febrile and paroxysmal reactions following transfusion, and require more transfused blood to bring the patient's red cells to normal. This is evident in the degenerative chlorotic grade of anemia, but more marked in the degenerative stage of hyperchromic grade of anemia, particularly pernicious anemia. To illustrate, case

J. H. C., entered the hospital in December, 1928. Hematological examination showed a severe anemia of the degenerative hyperchromic, megalocytic grade, and after clinical examination, a diagnosis of pernicious anemia was made. Ten transfusions of 500 c.c. each were given before the red cells reached normal. He had marked post-transfusion febrile and paroxysmal reactions. Two years later, he re-entered the hospital and presented approximately the same degree and grade of anemia as before. Liver therapy was started and daily reticulocyte counts were made. On the sixth day the reticulocytes had increased from less than one-half per cent to 19 per cent, with other marked evidence of red cell regeneration, clearly indicating that the degenerative grade of anemia had become regenerative. He was then given transfusions of 500 c.c. each, every other day. Five transfusions brought the red cells to normal, as compared to ten transfusions required in 1928. He experienced no chills and not more than a very mild febrile reaction following any of the last transfusions. We believe that pernicious anemia cases should not be transfused until after they have been on liver extract sufficiently long to produce a change in the blood picture.

Transfused blood may cause not only a simple mechanical increase in cells, but in most cases it stimulates the blood forming tissues to increased regeneration of the patient's own red cells and platelets. Duke[1] has shown that in purpura hemorrhagica, cases with no platelets in the circulation, a rise even to 10,000 per cubic millimeters quite definitely and beneficially influences the hemorrhages. Platelets above 30,000 or 35,000 in this type of purpura are usually associated with complete disappearance of the tendency to bleeding. The increase after transfusion, if only mechanical, persists for only a few days on account of the rapid destruction of the transfused elements, but if the formative tissues are stimulated, the increase is more or less persistent. One cannot hope, however, for any permanent increase of platelets after transfusion, but the transient results may be excellent.

There has been a good deal of speculation about the reactions following transfusions and I have seen them classified as follows: First, the hemolytic; second, the prolonged chill and high fever, without hemolysis; and third, moderate febrile reaction, with or without a slight chill. The first type, the hemolytic, should not occur. It is due to an error in matching the bloods. We depend upon typing the blood only as a matter of record and to facilitate the procuring of donors, chiefly in the unusual types. All bloods are directly cross-checked, the donor's serum against the patient's cells, and vice-versa, and we think that if this is done by a capable man that this first type of reaction should be entirely eliminated. A rather large per cent of cases have some kind of reaction, and a rather considerable per cent have a rather severe reaction. There are many suggestions as to what this is due to, but we think this occurs in all types of transfusions, and is liable to occur after the introduction of any kind of substance into the circulation, even normal salt and glucose. These reactions are of no serious consequence with the possible exception of the very ill and almost moribund patients, in which type of case, a chill and rise in temperature might be sufficient to be serious. We think, from experience, that reactions are less liable to be encountered if the citrate solution is freshly prepared, if the blood is stirred gently, and only enough to keep it mixed with the solution, and if the concentration is kept up to about 3-10 of one per cent, instead of 2-10 per cent.

Transfusion of blood has been recommended for almost any known condition, but its chief benefits are to restore the bulk of fluid in the blood vessels, to increase the coagulability of the blood, to stimulate the blood forming organs, to provide oxygen carrying material, and possibly to furnish bactericidal properties. It is the best known treatment for shock and for hemorrhage. It is the quickest way to return an anemic patient to normal, and it seems to act, not only by giving the patient blood, but by stimulating him to make blood himself. It furnishes hemoglobin in carbon monoxide poisoning. We think the most benefit in infectious and debilitating diseases is due to the correction of the anemia and to the stimulating act of the blood itself, but occasionally, a very remarkable effect is produced, as for instance, in the following case. Some years ago I had in the hospital a little girl, a child of parents who were very good friends of mine, who was almost moribund as a result of peritonitis following a gangrenous appendix. The child was cyanotic, her temperature could not be gotten below 105 by any ordinary means

and her pulse could not be counted. She was practically comatose. Just before noon, I gave her, very slowly, 500 c.c. of blood obtained from a neighbor. Six hours later, the child's temperature was 102½, her pulse was fair, and her color was good. She was conscious and the next morning she was well on her way to recovery. One never saw a more quick response from antitoxin, in diphtheria. I afterwards found that the donor had had a very severe infection in the hand some months before, and I am quite confident that in this particular case, the donor's blood contained a high concentration of specific antibodies. I have tried the same thing several times since in peritonitis, sometimes I thought with benefit, and sometimes not, but never with any such results as this. I think too, that this is the type of case in which, had a rather severe reaction occurred, that it might have hastened the end.

Recently, a case of puerperal sepsis was brought to the hospital. Her baby was two weeks old and she had been very ill since the third day following delivery. Her condition was apparently very desperate, and since her hemoglobin was below 70, we thought a transfusion might help her. Improvement following the first transfusion was remarkable. The whole picture was changed.

We have several times given as much as 2000 c.c. of blood at one transfusion. These were in cases of severe hemorrhage, and the results were usually excellent. We have many times given 1000 c.c. at one time, but the ordinary amount given is 500 c.c. If there is need for increasing the bulk of the blood we believe indications are to give enough blood to do this. In other conditions where the bulk of the blood is more nearly normal as in anemias, we give about 500 c.c. and repeat at one, two, or three day intervals.

In looking up our cases, considerable difficulty was encountered because they were not indexed under transfusion, but under the condition for which they were transfused. Probably some of them were missed. The cases found number 255 patients. The number of transfusions is 865. The average amount of blood given at each transfusion is 590 c.c. plus and the average amount given each patient is 2080 c.c. plus. Thirty-eight per cent had no reaction. Forty-three plus per cent had slight reaction, and eighteen-plus per cent had what might be classified as severe reaction. These figures on reactions are based upon the actual transfusion done and not upon the number of patients, and in classifying these cases according to reaction, we have regarded those cases who have had a feeling of chilliness with a rise in temperature some time during the same day to 100.5 as having a slight reaction, while those who had a chill or temperature of over 101, or both, as having a severe reaction. Of the 255 patients transfused, 78 died some time between the first day and the end of the second month. The deaths were not looked up beyond sixty days after the last transfusion. In classifying these cases, we have had much difficulty because many of them, without going into the individual history, were difficult to classify exactly as to the reason for transfusion.

The following reports are taken from the records from 1918 up to the present time.

PERNICIOUS ANEMIA

Number patients transfused, 22.
Number transfusions given, 122.
Average amount per transfusion, 580 c.c. plus.
Average amount per patient, 3227 c.c. plus.

No reaction, 40 per cent.
Slight reaction, 45 per cent.
Severe reaction, 15 per cent.

Number of deaths, 5.

Case No.	Year	
772	1921	Died 16 hours after 3rd transfusion.
154	1924	Died 24 hours after 28th transfusion over a period of two years.
858	1928	Died 23 days after 5th transfusion.
3504	1930	Died 2 hours after 4th transfusion.
2812	1930	Died 1 month after 4th transfusion of hemiplegia.

ANEMIA CASES, OTHER THAN PERNICIOUS

Number patients transfused, 57.
Number transfusions given, 206.
Average amount per transfusion, 570 c.c. plus.
Average amount per patient, 2060 c.c. plus.

No reaction, 39 per cent.
Slight reaction, 38 per cent.
Severe reaction, 22 per cent plus.

Number of deaths, 13.

Case No.	Year	
370	1920	Died 5 days after 1st transfusion.
712	1926	Died next day after 9th transfusion.
1565	1929	Died next day after 2nd transfusion. Moribund on entrance.
2694	1930	Died 21 days after 3rd transfusion, of hypernephroma.
2747	1930	Died 13 days after 3rd transfusion, of carcinoma.
3364	1930	Died 1 day after 2nd transfusion, of carcinoma.

323 1931 Died 2 days after 13th transfusion, of carcinoma.

2731 1931 Died 2 months after 4th transfusion, of carcinoma.

663 1932 Died 9 hours after 1st transfusion, of Hodgkin's disease.

599 1932 Died 4 days after 3rd transfusion, of intestinal Tb.

1360 1932 Died 9 hours after 6th transfusion, of intestinal Tb.

2 1933 Died 5 days after 2nd transfusion, of delayed shock.

33 1933 Died 24 days after 5th transfusion, of cardiac failure.

CASES OF SEVERE INFECTION, WHO WERE TRANSFUSED IN HOPES THAT THEY MIGHT GET SOME BENEFIT

Number patients transfused, 21.
Number transfusions given, 55.
Average amount per transfusion, 545 c.c. plus.
Average amount per patient, 1430 c.c.

No reaction, 34 per cent.
Slight reaction, 38 per cent.
Severe reaction, 27 per cent.

Number of deaths, 17.

Case No. Year

470 1919 Died 3 hours after 1st transfusion, of peritonitis.

577 1919 Died 4 days after 1st transfusion, of general septicemia.

791 1922 Died 15 days after 4th transfusion, of peritonitis.

1173 1926 Died 2 days after 1st transfusion, of empyema.

708 1927 Died 4 days after 13th transfusion, of bacteremia following carbuncle.

1120 1928 Died next day after 2nd transfusion, of peritonitis.

1138 1928 Died 17 hours after 1st transfusion, of peritonitis.

2208 1928 Died 21 hours after 1st transfusion, of peritonitis.

514 1929 Died 4½ hours after 1st transfusion, of peritonitis.

1617 1929 Died 53 minutes after 6th transfusion, of osteomyelitis complicated by pneumonia and septicemia. Moribund when transfusion was started.

2197 1929 Died 14 hours after 1st transfusion, of puerperal sepsis following abortion.

213 1931 Died 9 days after 2nd transfusion, of ileus.

857 1931 Died 4 hours after 1st transfusion, of septicemia following erysipelas. Hg. 14.

237 1932 Died 3 days after 3rd transfusion, of puerperal sepsis.

252 1932 Died 6 days after 4th transfusion, of sepsis and influenza.

772 1932 Died 1 day after 2nd transfusion, of peritonitis.

1427 1932 Died 2 months after 2nd transfusion, of urinary infection-complication of hypertrophied prostate.

ECTOPIC PREGNANCY

Number patients transfused, 20.
Number transfusions given, 70.
Average amount per transfusion, 700 c.c.
Average amount per patient, 2450 c.c.

No reaction, 48 per cent.
Slight reaction, 31 per cent.
Severe reaction, 21 per cent.

Number of deaths, 2.

Case No. Year

399 1919 Died 5 hours after 1st transfusion, of ileus.

1532 1929 Died 7 days after 2nd transfusion, of embolus.

Two of these cases were transfused on the table with blood recovered from the abdomen, one being given 800 c.c. and the other 1350 c.c., both making a good recovery.

HEMORRHAGE FROM THE STOMACH

Number patients transfused, 28.
Number transfusions given, 111.
Average amount per transfusion, 550 c.c.
Average amount per transfusion, 2180 c.c.

No reaction, 37 per cent.
Slight reaction 53 per cent.
Severe reaction, 10 per cent.

Number of deaths, 5.

Case No. Year

289 1922 Died 10 hours after 4th transfusion, of hemorrhage.

925 1923 Died 6 hours following 2nd transfusion, of burns.

1096 1927 Died 10 hours after 1st transfusion, of hemorrhage. Was moribund on entrance.

3684 1930 Died 6 hours after 2nd transfusion, of hemorrhage.

1173 1931 Died 24 days after 4th transfusion, of heart block.

UTERINE HEMORRHAGE

Number patients transfused, 45.
Number transfusions given, 144.
Average amount per transfusion, 600 c.c.
Average amount per patient, 1920 c.c.

No reaction, 35 per cent.
Slight reaction, 43 per cent.
Severe reaction, 22 per cent.

Number of deaths, 1.

Case No. Year

566 1922 Died 16 days after 1st transfusion, of heart block.

HEMORRHAGE FROM VARIOUS CAUSES, AND SHOCK

Number of patients transfused, 52.
Number transfusions given, 126.
Average amount per transfusion, 674 c.c.
Average amount per patient, 1480 c.c.

No reaction, 35 per cent.
Slight reaction, 50 per cent.
Severe reaction, 15 per cent.

Number of deaths, 28.

Case No.	Year	
630	1919	Died 3 hours after 1st transfusion of ruptured kidney.
552	1921	Died 8 hours after 1st transfusion, of injured spine.
344	1923	Died 5 hours after 1st transfusion, of hemorrhage.
531A	1924	Died 4 hours after 4th transfusion, of obstruction.
680	1924	Died 1 month after 4th transfusion, of sarcoma of the hip.
416	1926	Died 6 hours after 1st transfusion, of carcinoma of the bladder. Moribund on entrance.
922	1926	Died 18 hours after 3rd transfusion, of hemorrhage from rectal abscess.
1630	1926	Died 2 days after 12th transfusion, of carcinoma of the thyroid.
281	1927	Died 3 hours after 1st transfusion of acute dilatation of the stomach.
436	1927	Died 28 hours after 2nd transfusion, of ileus.
259	1928	Died 3 days after 2nd transfusion, of obstruction.
1032	1928	Died 4 hours after 1st transfusion, of goiter.
1667	1928	Died 3 days after 1st transfusion, of hypostatic pneumonia.
2025	1928	Died 2 hours after 2nd transfusion, of ileus.
2224	1928	Died 3 days after 6th transfusion, of pulmonary hemorrhage following pnuemonia.
459	1929	Died 1 hour after 1st transfusion, of ileus.
800	1929	Died 15 hours after 1st transfusion, of shock.
1685	1929	Died 36 hours after 5th transfusion, of osteomyelitis of the spine.
3664	1930	Died 38 hours after 2nd transfusion, of gun shot wound.
3729	1930	Died 6 hours after transfusion, of gun shot wound.
4108	1930	Died 13 hours after 3rd transfusion, of embolus.
46	1931	Died 5 hours after 1st transfusion, of ileus. (54 inches gangrenous bowel removed).
332	1931	Died 4 days after 2nd transfusion, of embolus.
1182	1931	Died 2 days after 2nd transfusion, of a broken neck.
1461	1931	Died 2 hours after 2nd transfusion, of mesenteric thrombosis.
63	1932	Died 6 days after 5th transfusion, of pelvic infection.
960	1932	Died 2 days after 3rd transfusion, of gas bacillus infection.
1228	1932	Died 12 hours after 5th transfusion, of typhoid.
1361	1932	Died 3 days after 4th transfusion, of pneumonia.

Of these cases, two had ruptured livers as the result of an accident and were transfused with blood recovered from the abdomen, one receiving 550 c.c. and the other, 1200 c.c. Both recovered.

PURPURA HEMORRHAGICA

Number patients transfused, 6.
Number transfusions given, 25.
Average amount per transfusion, 500 c.c.
Average amount per patient, 2080 c.c.

No reaction, 52 per cent.
Slight reaction, 24 per cent.
Severe reaction, 24 per cent.

Number of deaths, 4.

Case No.	Year	
468	1923	Died next day after 2nd transfusion.
207	1924	Died 3 days after 7th transfusion.
404	1925	Died 14 hours after 3rd transfusion.
1305	1927	Died next day after 3rd transfusion.

MISCELLANEOUS

Case No.	Year	
883	1921	Died 14 hours after 2nd transfusion, of pneumonia, following a fractured skull.
801	1926	Died 1 week after 1st transfusion, of diabetes.
338	1922	Died 2 days after 2nd transfusion, of fat embolism.

In analyzing these cases, we find no case in which death could be attributed to the transfusion, but in cases No. 3504, year 1930, No. 663, year 1932, No. 470 year 1919, No. 514, year 1929, No. 459, year 1929, and No. 1461, year 1931, all of whom were desperately ill, we think that the reaction following the transfusion may have hastened the end.

In conclusion: This is not a very large series of cases to draw conclusions from, but we are convinced that the safety in the transfusion of blood depends mostly upon the laboratory. It is a very safe and very useful operation. Indications for transfusion may be many but the chief ones are need of blood or need of more bulk in the circulation, but the amount of blood that the patient should be given, should depend entirely upon the amount which is needed. In our territory, we have had very little difficulty in obtaining donors.

DISCUSSION: *Dr. E. Eugene Rice*, Shawnee.

The importance of the transfusion of whole human blood cannot be over-emphasized as it is a surgical procedure that is very necessary for every physician, even the practitioner who performs only an occasional transfusion, to have at his command. It is safe. The cases of fatal reaction are rare if the surgeon's technique in typing and proceedure are correct. About 10% have some reaction and occas-

ionally a severe reaction, anaphylactic in character, with the typical symptoms of shock occurs. It is a life saving measure. In severe acute hemorrhage it is an emergency measure and the indication for its use should be realized at once. In other conditions as the anemias, the purpuras, severe infections, shock, and many other conditions the results are often dramatic.

The methods of "direct" or "indirect" or the use of unaltered or citrated blood have received much attention, and I believe the method should depend upon the proficiency of the physician. Probably the use of citrated blood in the hands of the occasional user is the safest, although the direct method is quicker, often with less reactions, and needs less assistants.

Dr. Hudson has emphasized the importance of not only grouping properly the donor and recipient, but of the great necessity of cross-agglutinating or matching of the sera and cells. Blood should not be used that does not properly group and in which there is no agglutination in either direction.

Personally I believe the amount of any fluid given intravenously should be limited, and probably 800 c.c. at one time is the maximum, and that repeated small transfusions of 500 c.c. or less will accomplish more and not over load the heart and vascular system, rather than massive transfusions of 1500 c.c. and more.

Transfusion not only replaces mechanically the fluids lost, but it stimulates the blood forming organs, increases the blood platelets, increases the oxvgen carrying cells, and often carries antibodies to overcome infection.

Dr. Hudson brought out an important point, that often the grade of anemia is directly proportional to the severity of the reaction following transfusion and I believe an attempt should be made to stimulate the blood forming organs before transfusions, as has been his practice, in the primary anemias.

Auto-transfusion as mentioned is very important as often the blood found in the peritoneal cavity will revive a pulseless patient, as it is available when needed without typing or delay. Thies has shown that there is no morphological change in this blood and no reaction should follow its return to the patient's circulatory system.

DOCTOR LESLIE MOORE

We are pleased to present, in this issue of the Journal, a picture of Dr. Leslie Moore, of Dallas, Texas, who was recently elected President of the Southern Medical Association, at their annual meeting in Richmond, Virginia.

All Oklahoma physicians are glad to congratulate the profession of Texas on the selection of Dr. Moore to head this great organization. The next meeting of the Southern Medical Association will be held in San Antonio, and a large attendance of Oklahoma physicians can be assured.

DEATH

William Wayne Babcock, 3rd, son of Dr. and Mrs. W. Wayne Babcock, Philadalphia; aged 8: Nov. 5, at Temple University Hospital, cause of death, blood stream infection.

The many friends of Dr. and Mrs. Wayne Babcock, in Oklahoma, will sincerely sympathize with them in this great bereavement.

Frank H. Lahey, Boston (Journal A. M. A., Sept. 23, 1933), presents his experiences with forty-five patients operated on for esophageal pulsion diverticulum. He has approached the diverticulum in all of his cases through a good sized left longitudinal incision. He states all the difficulties that he has encountered in operating on the forty-five patients for esophageal pulsion diverticulum and describes the measures he has employed to overcome them. Postoperative dilation in either one-stage or two-stage operation is necessary. The safety of the two-stage operation is attested to in this series by the fact that the forty-five patients have been operated on by this plan without a fatality. Whether one removes an esophagel diverticulum by a one-stage or a two-stage procedure, there will always be the possibility of the distortion of the esophagus at the pharyngo-esophageal junction. This results in obstruction to the passage of the bougie, and the exertion of any pressure on the bougie could easily result in perforation and a fatality. The author has insisted now for some time on the passage of bougies on a guide as a much more satisfactory and safe plan.

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Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

POST-GRADUATE MEDICAL TEACHING DISCONTINUED

In the last issue of the Journal there was published a brief history of post-graduate medical teaching in Oklahoma and a comment that it was hoped that the work might continue uninterrupted, however, it appears that this is not to be, as it has been necessary to discontinue this work for the present due to an action of the Board of Regents of the University wherein it is made compulsory that members of the various cults be allowed to register, pay fees and participate in Medical Post-Graduate courses. One of the cults insisted upon participation in the course in Internal Medicine and it was necessary to discontinue the course as the members of the regular profession refused to attend under such circumstances and the members of the faculty refused to appear before mixed groups.

The Committee of the State Association on Post-Graduate Medical Teaching has asked to appear before the Board of Regents to request them to withdraw this objectionable demand but so far has not had such an opportunity, however, of this we can be assured, that there will be no compromise in the matter. If there is post-graduate medical teaching in Oklahoma the regular profession will dictate the policy governing this work. It may be discontinued for a year but rather this than any concessions.

Let every member feel that this is his problem and do anything he can to assist in bringing about a satisfactory solution.

At a meeting of the Board of Regents, January 8th, all support for Post-Graduate Medical Teaching was withdrawn. This will mean that if we have Post-Graduate Medical Teaching it will have to be financed by the State Association and this matter will be taken up immediately with the Council, hoping to have as little interference with this program as possible. Remember we will have a new Board of Regents in a year.

SOME LEGISLATIVE PROBLEMS

There is nothing more important to the citizenship of this State than legislation which will tend to their protection in matters pertaining to the prevention and treatment of disease.

Fundamental education is a prime requisite in the development of ability to practice the healing art and legislation making this a legal requirement is greatly needed in Oklahoma.

All applicants for license to practice any form of the healing art should be required to pass examinations before impartial boards in anatomy, physiology, pathology, chemistry, histology and hygiene.

A Basic Science Law should receive the united support of all thinking people.

A bill should be enacted in Oklahoma requiring that the Governor appoint the State Board of Medical Examiners from a list of names submitted by the Oklahoma State Medical Association; in this way we would be assured that the Board would al-

ways be composed of representative practitioners.

There are at this time nine bills pending in Congress, proposing to erect new hospitals for the veterans in various parts of the United States. All of these bills are pending in the House Committee on World War Veterans Legislation. In each instance some particular locality is asking for from one-half to one million dollars to be spent for this purpose, notwithstanding that there are hundreds of vacant beds in veterans hospitals at this time, and thousands of vacant beds in civilian hospitals, these same institutions using every honorable means to meet their expenses and keep their doors open.

There are four bills before Congress that propose to re-enact all public laws, granting medical and hospital treatment to veterans, giving to all ex-service men hospitalization and treatment for non-service connected disabilities. These bills were repealed by the Economy Act approved March 20, 1933. Should they remain repealed?

These matters of legislation are brought to your attention at this time for your consideration, then after you have decided as to the wisdom or folly of each proposition use your influence to bring about a proper consideration of the matter by your representative, either State or National.

A NEW YEAR'S MESSAGE

To every member of our Association. I extend New Year's greetings, with the sincere wish that throughout the year, the attainment of the aspirations of each of you far exceed your disappointments. At this season, when we are wont to review the past and resolve for the future, I think of a saying that was current among western pioneers a hundred years ago. Covered wagons by the hundreds wended their way slowly through a single pass in the Alleghanies and out over a winding road toward the westward. Often were to be seen, as sad souvenirs of the trek, the whitening bones of dead horses and dead men. There were so many of the human skeletons along the way that there came to be this folk-saying, "The cowards never started, the weak died by the way." To apply this incident of history as an allegory, cowards never started the study or practice of medicine, because both its study and practice demand diligence and courage. Under present economic conditions, there is the inclination on the part of some to lose interest in maintaining the ideals of our profession, one evidence of which is the lapse of membership in regular medical organizations. It is my earnest hope that every doctor who is eligible, realize that you need your county and state societies and they need you. May there be none who were "weak and died by the way."

Fraternally yours,

T. H. McCARLEY, President.

ANNOUNCEMENT

A cordial invitation is extended to the medical profession of Oklahoma, Texas, Arkansas, Missouri and Kansas, by the President and Board of Regents of the American College of Surgeons, the Oklahoma State Executive Committee, and the Oklahoma City Committee on Local Arrangements, to attend the Oklahoma-Texas-Missouri-Kansas Sectional Meeting of the College at Oklahoma City on Thursday and Friday, February 22 and 23, 1934. An excellent two-day program is being prepared, consisting of well arranged clinics in general surgery, and eye, ear, nose and throat surgery at the local hospitals; clinical addresses, and scientific sessions in which a number of distinguished leaders in surgery will participate, and a hospital conference for the discussion of medico-administrative and other problems of interest to the medical profession, hospital administrators, trustees, and others. The sessions will be brought to a close by a large community health meeting at which the visiting speakers will talk to the people of the community on important health and hospital topics in the interests of scientific medicine.

This meeting will be of scientific value to every physician as well as affording an opportunity of becoming more familiar with the Hospital Standardization Movement which has done so much for the practice of medicine in all its branches, and which should be furthered to the fullest extent. Hospital problems are now of greater interest to the medical profession than ever before.

The Oklahoma City Committee on Local Arrangements is leaving nothing undone to make this a most successful meeting. A large attendance and a good program are assured. Further information pertaining to this meeting can be obtained by addres-

sing Doctor LeRoy Long, 117 North Broadway, Oklahoma City, secretary of the committee on local arrangements.

Editorial Notes—Personal and General

DR. J. R. WALTRIP former Coweta physician, has opened his office in Yale.

DR. S. W. REYNOLDS, Drumright, who has been ill with diphtheria is reported much improved.

DR. H. B. AMES, Alva, who has been ill at the Mayo Clinic, Rochester, is reported much improved.

DR. JOHN L. DORROUGH, Ardmore, who broke his right arm, in cranking his car, is reported much improved.

DR. R. M. ANDERSON, Shawnee, attended the meeting of the Southern Medical Association in December.

DR. AND MRS. R. M. HOWARD, Oklahoma City, spent a week at their ranch near Wheeler, Texas, in September.

DR. W. W. KERLEY, Anadarko, attended the Southern Medical Association, Richmond, Virginia, which met in December.

DR. L. D. CONN, former Okmulgee County doctor, recently of Hot Springs, Arkansas, has opened offices in Webb City.

DR. PAT FITE of Muskogee, addressed the Kiwanis Club of that city Tuesday, January 2, on the "New Discoveries in Medical History."

DR. E. S. KILPATRICK, Elk City, who received serious injuries when his car overturned while enroute to Frederick, is reported improving.

DR. W. L. TAYLOR, Holdenville, is reported recovering from injuries received in an automobile accident, which occurred in Durant in late December.

DR. L. C. KUYRKENDALL, McAlester, became eligible for the hole-in-one club on June 1, 1931, but he experienced that thrill a second time when he scored a coveted ace on the No. 4 green of the McAlester Country Club course December 10, 1933.

News of the County Medical Societies

CUSTER COUNTY MEDICAL SOCIETY elected the following officers for 1934: Doctors T. A. Boyd, President, Weatherford; J. T. Frizzell, Vice-President, Clinton; C. Doler, Secretary-Treasurer, Clinton.

TULSA COUNTY SOCIETY met in December and elected the following officers for 1934: Doctors Ned R. Smith, President; R. M. Shepard, President-Elect; Russell Pigford, Vice-President; Carl F. Simpson, Secretary-Treasurer.

GARVIN COUNTY MEDICAL SOCIETY met in December and elected the following officers for 1934: Doctors Ray H. Lindsey, President, Pauls Valley; W. P. Greening, Vice-President, Pauls Valley; John R. Callaway, Secretary-Treasurer, Pauls Valley; L. P. Smith, Censor, Elmore; E. F. Taylor, Delegate to the State Convention, Maysville; John R. Callaway, Alternate, Pauls Valley.

BLAINE COUNTY MEDICAL SOCIETY met December 14, 1933, and elected the following officers for 1934: President, Dr. A. K. Cox, Watonga; Vice-President, Dr. J. W. Browning, Geary; Secretary, Dr. W. F. Griffin, Watonga.

PUSHAMATAHA COUNTY MEDICAL SOCIETY elected the following officers for 1934, at their annual meeting held in December, 1933: President, Dr. H. C. Johnson, Antlers; Vice-President, Dr. J. Kirkpatrick, Tuskahoma; Secretary-Treasurer, Dr. B. M. Huckabay, Antlers.

HUGHES COUNTY MEDICAL SOCIETY elected the following officers for 1934, at their annual meeting in December: Doctors W. M. Taylor, President, Holdenville; S. H. Hamilton, re-elected Vice-President, Non; G. W. Diggs, re-elected Secretary-Treasurer, Wetumka.

PONTOTOC COUNTY MEDICAL SOCIETY had its regular meeting December 6, 1933, and elected the following officers for 1934: Doctors M. L. Lewis, President; M. M. Webster, Vice-President; Hervey A. Foerster, Secretary-Treasurer; C. F. Needham, Delegate to the State Medical Association; E. A. Canada, Oscar Miller and I. L. Cummings, Board of Censors; all of Ada.

BRYAN COUNTY MEDICAL SOCIETY met December 5, 1933, and elected the following officers for 1934: Doctors, H. B. Fuston, Bokchito, President; Charles G. Price, Durant, Vice-President; John T. Wharton, Durant, Secretary; J. T. Colwick and D. Armstrong, both of Durant and A. J. Wells, Calera, Censors; O. J. Colwick, Durant, Delegate to the State Medical Association; James L. Shuler, Durant, Alternate.

STEPHENS COUNTY MEDICAL SOCIETY elected the following officers for 1934, at their annual meeting in Duncan, December 26, 1933: Doctors Conner P. Chumley, President; E. C. Lindley, Vice-President; D. Long, re-elected Secretary-Treasurer; A. J. Weedn, Delegate to the State Convention; J. W. Nieweg, Alternate; A. M. McMahan, Censor; Wallace S. Ivy Committeeman on Public Policy, all of Duncan.

WOODWARD COUNTY MEDICAL SOCIETY met at the Baker Hotel, Woodward, December 15, 1933, for their annual meeting and banquet. Dr. Floyd Newman, Shattuck, presented a paper on "Blood Transfusion"; Mr. Crossett, District Relief Superintendent, spoke on his work. The following officers were elected for 1934: Dr. H. L. Johnson, Supply, President; Dr. D. W. Darwin, Woodward, Vice-President; Dr. C. W. Tedrowe, Woodward, Secretary-Treasurer.

CANADIAN COUNTY MEDICAL SOCIETY met in El Reno in December for their annual meeting and election of officers for 1934. After a 7:00 o'clock turkey dinner the following officers were elected: Doctors Joseph T. Phelps, President; P. F. Herod, re-elected Vice-President; Malcom E. Phelps, Secretary-Treasurer, all of El Reno. Three new members were accepted into membership, including Doctors G. G. Van Dyke, and Arthur W. Hill, El Reno; W. R. Miller, Calumet. Guests attending were Mr. L. W. Kibler Norman, and Doctors C. R. Roundtree, and G. H. Harrison, Oklahoma City, and Dr. J. E. Hughes, Shawnee, who entertained the Society with a lecture and moving pictures of his hunting trip in Alaska.

OSAGE COUNTY MEDICAL SOCIETY met late in December and elected the following officers for 1934: Doctors, C. K. Logan, President, Hominy; D. Worten, Pawhuska, Vice-President; M. E. Rust, Pawhuska, Secretary-Treasurer; Doctors Roscoe Walker, Pawhuska, T. J. Colley, Hominy, and P. H. Hemphill, Pawhuska, Board of Censors; Doctors E. C. Keyes, Shidler, and C. K. Logan, Hominy, Delegates; Doctors Roscoe Walker, Pawhuska, and D. Worten, Pawhuska, Alternates.

OTTAWA COUNTY MEDICAL SOCIETY met December 7, 1933, at the Miami Baptist Hospital for their annual meeting and election of officers. The following were elected for 1934: Doctors General Pinnell, President, Miami; J. S. Jacoby, First Vice-President. Commerce; H. K. Miller, Second Vice-President, Fairland; Richard Russell, Third Vice-President; Picher; J. W. Craig, Secretary-Treasurer, Miami. It was announced that their annual game dinner would be held at the Main Hotel, Miami, December 22nd.

OTTAWA COUNTY MEDICAL SOCIETY met in Miami, December 22, 1933, when they entertained with their annual dinner and home coming. The following scientific program was given: Dr. E. H. Skinner, Kansas City, presented a paper on "Cancer of the Cervix Uteri—Prevention and Treatment"; Dr. C. C. Dennie, Professor of Dermatology, Kansas University, Kansas City, lectured on "The Approach to the Treatment of Syphilis"; Dr. Fowler Border, Mangum, talked on "Thirty Years' of Active Practice of Medicine."

PITTSBURG COUNTY MEDICAL SOCIETY met December 21, 1933, for their annual election of officers. The program began with the showing of two films on professional topics at the Oklahoma Theatre. Brain operations were dealt with in the first film, while the other was on prostate hypertrophy. A luncheon followed at the Enloe Hotel. The following officers were elected: Doctors, E. H. Shuller, President; F. A. Bartheld, Vice-President, Delegates to the State Convention; J. A. Munn and C. M. Pierce, Alternates; F. M. Baum, V. H. Barton, and O. C. Rice, Censors.

JEFFERSON COUNTY MEDICAL SOCIETY met in Waurika December 4, 1933, for their annual meeting and election of officers. Dinner was served at 7:00 o'clock, after which the following program was presented: Dr. Everett Jones, Wichita Falls, gave a talk on "Ten Years' Experience with Radium in Uterine Conditions"; Dr. J. H. Reagan, also of Wichita Falls, spoke on "Electrical Treatments for Prostatic Conditions."

The following officers were elected for 1934: Doctors W. C. Burgess, Ringling, President; J. I. Hollingsworth, Waurika, Secretary-Treasurer.

BECKHAM COUNTY MEDICAL SOCIETY met in regular session at Sayre, December 13, 1933, and the following officers were elected for 1934: President, Dr. H. K. Speed, Sayre; Vice-President B. B. Roberts, Erick; Secretary-Treasurer, Dr. C. F. Jones, Erick; E. S. Kilpatrick, Elk City. Program Committee: Standifer, Chairman, Elk City; R. C. McCreery, Erick; E. S. Kilpatrick, Elk City. Program Committee Doctors D. H. Pitts, Chairman, Elk City; J. E. Levick, Elk City; P. J. DeVanney, Sayre. Dr. DeVanney was also elected Delegate to the State Medical Association, with Dr. V. C. Tisdal, Elk City, as Alternate.

COMANCHE COUNTY MEDICAL AND DENTAL SOCIETIES were entertained with a dinner and program, December 14, 1933, by the medical and dental staff of the Station Hospital, Fort Sill. Major James A. Bethea gave a lecture on "Fractures" with X-ray pictures; Major Herring of the Dental Staff lectured on Fractures and treatment of "Fractures of the Jaw," dwelling on the latest method of wiring the teeth to produce mobilization. Comanche County Medical Society extended the courtesy of associate membership to the personnel of the Fort Sill Medical Officers and the Staff of the Kiowa Indian Hospital.

MUSKOGEE COUNTY MEDICAL SOCIETY held its annual meeting December 11th, 1933, at the Muskogee Town and Country Club. A golf tournament was held at 1:30 P. M., and dinner was served at 7:00 o'clock. The following were present: Doctors Denny, Cook, Osborn, Witcher, Nesbitt and Wood of Tulsa; Doctors Tolleson and Little of Eufaula; Doctors Stark, Glismann, and Hudson of Okmulgee; Doctor Roland, Oklahoma City; Dr. R. M. Church, Stilwell; Doctors Dyer, Welch, Bernard and R. L. Mitchell, Veterans Hospital, Muskogee.

The following officers were elected for 1934: President, Dr. Charles Edgar White; Vice-President, Dr. J. G. Rafter; Secretary-Treasurer, Dr. S. D. Neely; Censor, Dr. M. K. Thompson.

OKMULGEE COUNTY MEDICAL SOCIETY met in Henryetta December 18, 1933, for their annual meeting and election of officers for 1934. The scientific program was presented by members of the staff of the General State Hospital for insane at Norman. Dr. J. J. Gable, Assistant Superintendent was in charge and spoke on "Acute Neurasthenia"; Dr. Charles R. Rayburn on "The Circulation of the Central Nervous System"; Dr. J. L. Day on "Mental Hygiene." Dr. Ben Cooley of Norman was also present.

The following officers were elected: Doctors J. G. Edwards, Okmulgee, President; J. C. Matheney, Okmulgee. Vice-President; M. B. Glismann, Okmulgee, Secretary-Treasurer; J. C. Rembert, Okmulgee, Censor; F. S. Watson, Okmulgee, and H. D. Boswell, Henryetta, Delegates to the State Convention; G. Y. McKinney and M. B. Glismann, Alternates.

SOUTHERN OKLAHOMA MEDICAL ASSOCIATION met December 5, 1933, at Shawnee, and the following program was presented:

Luncheon, noon.

Address of Welcome—Dr. J. A. Walker, Shawnee.

Response—Dr. J. L. Holland, Madill.

Address on the State Medical Association—Dr. L. S. Willour, State Secretary-Treasurer-Editor, McAlester.

"Pathology of Encephalitis"—Dr. L. A. Turley, Norman.

"The Tubercular Kidney"—Dr. G. S. Baxter, Shawnee.

"Circulatory Diseases of the Extremities"—Dr. John Morey, Ada.

"Mental Hygiene Movement"—Dr. Carl T. Steen, Norman.

"Field of Mental Hygiene"—Dr. John L. Day, Norman.

The following officers were elected for 1934: Doctors J. W. Nieweg, Duncan, President; Alfred R. Sugg, Ada, President-Elect; Hervey A. Foerster,, Ada, Secretary-Treasurer.

SOUTHEASTERN OKLAHOMA MEDICAL ASsociation held their twenty-fourth semi-annual session in Durant, December 14, 1933, and the following program was rendered:

"Some Common Causes of Pyrexia in Children," Dr. Arthur Jenkins, Durant.

Luncheon.

"Invocation, Rev. Wm. N. School, Pastor, First Presbyterian Church, Durant.

Address of Welcome, Dr. John A. Haynie, Durant.

Response, Dr. J. S. Fulton, Atoka.

President's Annual Address, Dr. J. C. Johnston, McAlester.

"Organized Medicine," Dr. L. S. Willour, McAlester.

"Eclampsia and Its Treatment," Dr. E. H. Shuller, McAlester.

"Some Defects in Medical Education," Dr. G. W. West, Eufaula.

"Tuberculosis in Childhood," Dr. F. P. Baker, Talihina.

"The Family Doctor," Dr. W. A. Tolleson, Eufaula.

DOCTOR ARLINGTON R. HAVENS

Dr. A. R. Havens, Blackwell, 64 year old physician of Kay county died October 28, 1933, of blood poisoning.

Dr. Havens was born October 10, 1869, at Manito, Illinois. He graduated from Barnes Medical College in St. Louis, in 1900. He began practicing medicine at Nardin in 1901, and until he moved to Blackwell in 1917, where he practiced until the time of his death.

He was a member of the Masonic lodge, a member of the Blue lodge at Nardin and the Chapter and Commandery in Blackwell. He was recently appointed assistant city physician.

Dr. Havens is survived by his wife, one son and one daughter.

RESOLUTIONS TO THE DEATH OF DR. J. H. CAMERON OF HEALDTON

Whereas our friend and fellow member, Dr. J. H. Cameron, has been unduly called from us, we the committee of Carter County Medical Society wish to express our sincere regret on account of his untimely death. Dr. Cameron was a worthy citizen, a capable physician, and an honor to the profession. Our Society will miss him greatly in its deliberations. We desire to express our sincere sympathy to his devoted wife and trust that it may be in a measure, comfort in knowing that he was held in high esteem by the profession wherev'r known.

DR. F. P. VON KELLER,
DR. J. C. McNEES,

Committee Carter County Medical Society.

DOCTOR THOMAS S. CHAPMAN

Dr. T. S. Chapman, McAlester, died at Albert Pike Hospital, Monday, December 11, 1933, cause of death being cerebral hemorrhage.

Dr. Chapman graduated from the Louisville Medical College, Louisville, Kentucky, in 1896, and the same year located in McAlster, where he has lived during his entire professional career. He was married July 22, 1896, to Miss Nellie Owen Martin of Louisville. His wife, two daughters and one son survive.

Dr. Chapman has always been active in the practice of medicine, having been a member of the old Indian Territory Medical Association; and the Oklahoma State Medical Association since its organization. He was very active in all civic matters having been a member of the Board of Directors of the Izaak Walton League; he was mayor of McAlester, and for a short time was a member of the State Fish and Game Commission. He was a local member of the Elks Club, Indian Consistory, A. A. S. R., and for a number of years was an active Rotarian.

Funeral services were conducted Wednesday forenoon from the Chapman home, with Dr. Samuel R. Braden of the First Presbyterian Church officiating.

RESOLUTION

Whereas the Pittsburg County Medical Society having lost one of its members in the death of Dr. T. S. Chapman, who in his sixty-fourth year departed this life in the City of McAlester, where he had practiced his profession for more than thirty-five years, and

Whereas the Society feeling it's loss of one of the veterans in the medical profession, and especially in losing a distinguished member as Dr. Chapman, who was a leader in his community, and at one time Mayor of the city in which he so long resided:

Therefore the Pittsburg County Medical Society of Pittsburg County, Oklahoma, extends upon it's records this resolution in order that his memory shall not fade, and further extends the heartfelt sympathy of the society to the beloved family of Dr. T. S. Chapman, and to those who loved him.

V. H. BARTON
J. E. DAVIS
L. S. WILLOUR
Committee

DOCTOR OSEE C. BUTLER

Dr. O. C. Butler, Seminole, died October 27, 1933. He was born in Arkansas in 1886; graduated from the University of Arkansas, School of Medicine, 1917. He practiced in the State of Arkansas until 1926, when he moved to Seminole; here he was licensed to practice in 1929.

Dr. Butler was the president of Seminole County Medical Society in 1932; also a thirty-second degree Mason.

He is survived by his wife.

ABSTRACTS ◆ REVIEWS ◆ COMMENTS AND CORRESPONDENCE

EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Bldg., Tulsa

Function of the Reattached Retina. P. C. Kronfeld, M.D., Chicago. Archives of Ophthalmology, November, 1933.

How successful a reattached retina functions after it has been detached for sometime is almost as complex as the action of the normal retina. A scientific solution of the function of the reattached retina will necessitate a vast amount of work on the part of the ophthalmologist, the psychologist, and the physiologist. Until this occurs a practical conception regarding the probable functional outcome of an operation for retinal detachment cannot be favorably introduced to the patient. In cases of partial but advancing detachment an anatomic cure or reattachment without any return of function is beneficial but the possibility of an improvement in function is the most influential factor. Approximately ten years ago, just prior to the first usage of the very important tear-searing operation the majority of observed reattached retinas were cases of so-called detachments during pregnancy. These cases generally show partial atrophy of the optic nerves with narrowed arteries, readily healing, and are not comparable to the idiopathic or traumatic detachment. When the retinal detachment occurs in the region of the macula and is of less than sixty days duration or when the detachment here is incomplete and over this length of time the outlook for a normally acting retina is good. The older the complete detachment the less likely the anatomic cure. Apparently no gross subjective disturbance is noticed by the patient since the majority of reports on reattached maculae do not mention the color sense. In a peripheral retinal tear or tears evidence of choroiditis is usually found in both eyes. There is also the possibility of damage due to surgery although the author states there are no definite signs of remote, permanent or noxious effects from uncomplicated operations such as are performed in this series. There is the possibility of an occasional intraretinal hemorrhage. Kronfeld reports six cases which have been studied with great scrupulosity. Four were treated with the electric cautery following Linder's modification of Gonin's perforating thermocauterization. Two were operated on after Weve's method. The duration of detachment to time of first operation varied from about three to fifteen months. Quantitative perimetry on the simplified Ferree and Rand peripheral retina. These tests show the differential perimeter and the Bjerrum screen with white targets is used for testing the light sense of the reattached threshold for intensities of light is considerably higher for a reattached than for a normal retina. There was no permanent damage done to areas farther than 3 mm. away from the area of operation for the perception of color. In some of the reported cases the color sense was good after operation. Metamorphopsia was not present at all in one and only slightly present in another patient. One patient could read the finest print. This series brings out among other important points that the visual fields do not continue to improve for a year or two after the last operation as is claimed by some men in previous reports.

Fundamental Principles of Functional Hearing Tests. Robert Sonnenschein, M.D., Chicago. Archives of Otolaryngology, November, 1933.

While testing the hearing to determine the presence, location and degree of impaired hearing using such methods and appliances as the voice, acoumeter, watch, Koenig rods, tuning forks, resonators, whistles, monochords, audiometers and sounding rods the reaction of the patient must not be over-looked. After a minute examination of the ear and the nose, the nasopharynx and pharynx should be carefully examined and any anomaly affecting the ear, particularly by way of the eustachian tube should be considered. Septal deviation and any other form of nasal obstruction implicating the ear are not always indicative of intranasal surgery unless: (1.) There is difficulty in breathing; (2.) the drainage of the accessory sinuses is impeded; (3.) poor aeration of the eustachian tube caused by large tonsils; (4.) growths in the nasopharynx; (5.) or when a purulent discharge of the sinuses infects the tube. The monotone voice is one of the most practical and commonly used tests. During this test it is important that the patient does not see the speaker and that the opposite ear is well occluded. This is not easily accomplished but to overcome this difficulty a 2 or 3 meter speaking tube may be used. Following this test or by watch or acoumeter the ears may be inflated with the Politzer bag or preferably by way of the eustachian catheter. After inflation if a noticeable improvement is seen, further treatment will usually benefit the patient, but if no improvement is noticed as a general rule local treatment is of no use. The main tuning fork tests are the Weber, Schwabch and the Rinne. The Gelle test is used to ascertain the degree of fixation of the foot plate of the stapes. The Stenger test detects the malingerer of unilateral deafness. Among the several audiometers on the market the most highly developed is made by the Western Electric Company and includes the 1-A for research, 2-A for office, and the 4-A with a phonograph for testing school children in groups. By means of this audiometer a graph is made and loss of hearing is computed in sensation units. This is also possible with tuning forks but the time element makes them impractical. Eisenhour has perfected a complete range of forks made of magnesium-aluminum alloy which are rust and tarnish proof. It is not possible to authorize a fixed rule or measure for the human voice but by means of the methods and appliances mentioned one is able to arrive at an accurate diagnosis of the diseased condition of the sound perception and the sound conduction apparatus.

Nasla Papilloma With Report of A Case With an Enormous Nasopharyngeal Extension. Walter A. Wells, M.D., Washington, D. C. The Laryngoscope, November, 1933.

The patient's (age 70) chief complaint was a growth protruding from the right side of his nose and a lump in his throat noticeable when swallowing. This

had been present in some degree over a period of twelve years. There was no loss of weight; no pain; no enlarged glands and no evidence of metastasis. The tumor filled the nasopharyngeal space and extended backward and downward practically to the root of the tongue. It was pedunculated and had a dull red, opaque appearance. A section of the tumor was removed and microscopically examined. The report read: "The tumor is papillary carcinoma, probably of low grade malignancy." The tumor was treated with X-ray three times before it was removed surgically. The base of the growth was in the region of the ethmoids. Two postnasal tumors which were next removed were each the size of a hen's egg. X-ray or radium was advised to be used at regular intervals. One year after operation inquiry showed that the patient had been getting his X-ray treatments regularly and that he was still working at his trade of shoemaker. Just four cases of papilloma of the nasopharynx comparable to this one are reported in the literature and only about a total of one hundred cases of the entire nasal cavity. Those originating in the sinuses are usually pedunculated or cauliflower in character and are apt to recur after removal. Papilloma in the choana are nearly always single while those deep in the nasal fossa are multiple. A compressed nasal polyp is sometimes macroscopically mistaken for a papilloma. Papilloma of the larynx may have an infectious origin but this is not true of all nasal papillomata. Nasal papillomata are not classified as malignant growths but have an intermedial place between the benign and the malignant and many suddenly change into malignancy.

A Study of Twenty-four Cases of Neck Infection. August L. Beck, M.D., New Rochelle, N. Y. Annals of Otology, Rhinology and Laryngology, Vol. XLII, No. 3.

Deep purulent infections of the neck are referred to in this report. This is a subject of common interest to the general practitioner and more especially to the laryngologist. These infections occur in all localities, at any age, and are about equally prevalent in both sexes. An intimate knowledge of the subject and applied anatomy of the neck is a duty and obligation on the part of the laryngologist since he is the consultant to the general surgeon and family physician. The greatest source of infection (45%) comes from in and about the tonsil and the second greatest etiological factor is in the pharynx (13%). Infection in the mandible following extraction of teeth accounted for 12%. Seven cases (29%) had as many different causes: following tonsillectomy, after removal of an adenoid, from injection of a local anesthetic, trauma from a bread crust, infected lymph node, infection of the capsule of the thyroid gland and inflammation of the petrous part of the temporal bone. There are three principle fascial compartments present in the neck: the parotid, the submaxillary and the pharyngomaxillary. The surgical approach to these is either through the submaxillary space after elevating the gland as recommended by Mosher or beneath the angle of the jaw directly without elevating the gland. The author states that in this series of cases over half were in the pharyngomaxillary space originating from infections in the tonsils and pharynx. An extension of the infection from the submaxillary into the pharyngomaxillary space is not uncommon. Trismus is one of the important signs pointing to an infection high up in the neck as in the parotid region. Submaxillary fascia infection is of dental origin and of another group the cause of which is sometimes not easily understood. The fascial attachment at the hyoid bone is an obstacle to the downward progress of the infection. Those having a dental origin are given a good prognosis as the submaxillary space submits readily to drainage. Others of this group are not given such a good prognosis because of probable extensions and complications which are liable to occur. A carotid sheath infection is secondary to any of the infections in the above mentioned compartments. The surgical approach to a carotid sheath infection is an incision along the anterior border of the sternomastoid muscle as if for a jugular resection. The degree of sepsis of the patient must govern the physician since there may be a jugular sheath infection and an absence of local signs such as tenderness, swelling, etc. Blood cultures should be taken early during or immediately after a chill. Incision of superficial cervical gland abscesses is indicated when there is fluctuations or inflammation of the skin. In the deep gland suppurations sepsis and blood culture examinations are alone the important indicators. The most prevalent of the prevertebral fascia infections is the retropharyngeal abscess as found in children. Peroral drainage by a direct incision of the pharyngeal wall or an incision along the anterior border of the sternomastoid muscle lateral to the larynx as recommended by Dean usually produces prompt recovery. Buccopharyngeal, visceral or pretracheal fascia infections are the type which may sometimes be drained by internal incision, working through a laryngeal or oesophageal speculum. An important point is to avoid cutting the internal branch of the superior laryngeal nerve in the region of the pyriform sinus. The previously mentioned bread crust case was drained in this manner. External drainage may also be necessary in case of downward extension of the infection.

DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by William E. Eastland, M.D.
Lain-Roland Clinic, M. A. Bldg. Okla. City

Excretion of Bismuth in a Series of Clinical Bismuth Treatments, Torald Sollmann, M.D., H. N. Cole, M D., and Katharine I. Henderson, A.B., (With the collaboration of J. V. Ambler, M.D.; H. F. De Wolf, M. D.; R. L. Howard, M.D.; E. C. Loomis, M.D.; J. E. Rauschkolb, M D.; and Henry C Shaw, M.D.), Cleveland, the Archives of Dermatology and Syphilology, Vol. 28, Number 5, November, 1933.

This article is the result of a painstaking work by a group of scientists who had a desire to determine the comparative effectiveness of various bismuth compounds. This work was done in contrast to the usual methods employed for this determination; that is, the disappearance of spirochetes from the lesion, the reversal of the Wassermann reaction, clinical progress, and X-ray pictures to determine the degree of absorption of the product from the tissues. This investigation is based on the amount of various forms of bismuth injected into the body, and the elimination as determined by excretion from the kidneys and, to a certain degree, in the feces. To appreciate fully the painstaking methods and scientific accuracy, a personal reading of the article is necessary.

The authors compared the following bismuth preparations in regard to their urinary excretion: "watery solutions of sodium bismuth citrate and sodium bismuth tartrate, and a solution of the citrate in ethlene glycol; oily solutions (biliposol, quiniobine and bis-

mo-cymol); oil suspensions (the water-soluble sodium potassium bismuth tartrate and the water-insoluble bismuth subsalicylate)."

It was found that watery solutions of bismuth are absorbed more rapidly than oil solutions; that oil solutions are absorbed more rapidly than oil suspension of the tartrate; that the later is absorbed more rapidly than the oil suspension of the salicylate. Likewise, the excretion of these bismuth preparations is in direct proportion to their absorption.

Among the conclusions formulated it was found that watery solutions are quick in their action but are not sustained and, therefore, they necessitate much more frequent injections in order to maintain the same degree of bismuth concentration in the body. Oil solutions are absorbed with sufficient rapidity to be of clinical value, and are retained in the tissues over a much longer time, thereby exerting their spirochetal effect over a greater period of time. It was found that the oil suspension of the salicylate was eliminated extremely slow, and therefore was dangerous on account of the possible toxic element. To recapitulate, the oil solutions are of greater value in a practical clinical way as they are efficient spirochetocides and do not require that the patient shall have several injections each week of bismuth.

Of the oil solutions a study was made and the velocity of excretion and absorption is in the following order: biliposol, first; quiniobine, second; and bismo-cymol, third. These comparisons are extremely valuable inasmuch as they specifically mention the names of different products and thereby eliminate any question of doubt in the physicians's mind as to what product is the best; in other words, from their work the biliposol is the outstanding product.

Nickel Eczema, Leon Goldman, M.D., Cincinnati, the Archives of Dermatology and Syphilology, Vol. 28, Number 5, November, 1933.

The author of this article has carefully reviewed the papers of other men who have dealt with this subject. He calls attention to the possibility of error existing in reported cases by stating the other possible irritants were concerned, and that inasmuch as patch tests were not done with the suspected irritants the results would be inconclusive. The author reviewed cases of workers who were employed in plants that used nickel for plating different objects. He called attention to one shop in which 370 persons were employed in such work, and that in that number only 20 were able to continue for two years. The cases which he specifically reports are detailed. In the first, a nineteen-year-old boy had an extensive skin eruption after two days' work. Patch tests were done with various combinations of nickel salts and in all instances they were positive. A patch test with a metal coin of nickel was negative. In the second instance, a thirty-one-year old worker developed a dermatitis after three days' work in a nickel plating shop. Patch tests with nickel salts were likewise positive, as well as the test with a coin of nickel. In the first case, the patient gave a history of generalized urticaria, and in the second case the patient had had attacks of hay fever for the preceding two years. The author believes that this allergic predisposition may have influenced the patients to be especially sentitive to nickel.

He further calls attention to the possibility of people becoming sensitized to this metal by repeated contact with objects in which nickel is contained, such as the nickel in coins, the nickel in metal objects on clothing, e.g., the fastenings on suspenders. In nearly all instances where there is clear-cut evidence of nickel sensitivity such patients are permanently barred from following an occupation that brings them in contact with this metal.

Some Observations on the Eczematous Reaction Evoked by Skin Diseases, Andrew L. Glaze, M.D., Birmingham, the Southern Medical Journal, Vol. 26, Number 12, December, 1933. (Chairman's Address, Section on Dermatology and Syphilology, Southern Medical Association, 27th Annual Meeting, Richmond, Va., November, 1933).

In this article the author reviewed to a certain extent the changing ideas in regard to the etiology of eczema. He brings out the thought that although very little of a practical value has been determined, nevertheless progress is being made to a clearer conception of the disease. His example as quoted from Sabouraud concerning washer-women working side by side under identical conditions, in which one develops an eczema from soap and the other does not, is for the purpose of demonstrating that there is some endogenous factor present that makes the one woman susceptible. Glaze believes, along with others, that there is some biochemical or biophysical condition of cells in the body that behave in such a way as to predispose people to skin disturbances. As yet, only the surface has been scratched in regard to the understanding of cellular chemical changes.

TUBERCULOSIS

Edited By

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The Treatment of Pulmonary Tuberculosis by Hyperpyrexia, G. R. Duncan, E. P. K. Fenger, and A. B. Greene, The Amer. Rev. of Tb., December, 1933.

This is only a preliminary report and is of interest, not from the point of any tried therapeutic measure, but in speculation as to the results of further work and observations along these lines. Working on the well-known fact that the tubercle bacillus is thermolabile, the authors have attempted to damage the organism by artificially producing a state of hyperpyrexia in the host. To accomplish this means the authors have used hot baths. Their conclusions thus far are based on five cases reated by hyperpyrexia. The usual rise of the patient's temperature was to 104 by mouth, the technique, time, etc., is given in detail. In this limited number of cases they were able to demonstrate definite improvement. Such improvement, as shown by X-ray and clinical manifestations, was discerned in some cases in as short a time as ten days.

Further study of a larger series of cases well controlled will be necessary before any definite conclusions can be arrived at.

The Diagnosis of Carcinoma of the Lung, Louis Hamman, The Amer. Rev. of Tb., December, 1933.

Beginning, the author points out the rapidly changing attitude of the clinician towards carcinoma of the lung. Thirty years ago it was considered a rare disease and only occasionally diagnosed. Now it is frequently recognized and almost daily considered in dianosis. Opinions differ as to the exact interpretation of the increased number of cases, some holding that

it is due to improved diagnostic procedures; while others maintain that there is a definite increase in the incidence of primary carcinoma of the lung.

As pulmonary surgery is making rapid strides in overcoming technical difficulties, it is of utmost importance that physicians be prepared to recognize early such conditions as are amenable to operation. In considering the diagnosis, the author divides its clinical manifestations into three groups: (1.) Instances in which the pulmonic growth is secondary to a primary cancer located elsewhere. (2.) Instances in which the primary growth is in the lung, but the first clinical evidence of its presence comes from metastases to distant organs. (3.) Instances in which the primary growth is in the lungs and the earliest symptoms come from its presence there.

In the first group, that of secondary metastatic carcinoma, the clinical manifestations are pointed out as extremely variable. Many times the lesions are revealed unexpectedly by the roentgen ray. In other cases, symptoms of cough, dyspnea, and symptoms not unlike those of pulmonary tuberculosis, are manifest. In the second group, the primary pulmonary growth is not discovered until conspicuous symptoms arise as a result of metastases to other organs. Most frequently encountered are metastases to the brain, bones and liver. Manifestations of the third group are clinically shown as: (1.) Bronchial irritation, or compression. (2.) A well circumscribed tumor. (3.) Pleurisy, usually with effusion; and (4.) a disseminated miliary infiltration.

Cancer arising in a large bronchus usually causes, first; an irritated paroxysmal, and often stridulous cough. Later, a clinical picture of bronchiectasis or lung abscess may present itself. These tumors are often diagnosed earliest with the aid of the bronchoscope. Cancer of the lung itself gives rise to a harsh irritative cough, usually accompanied by some pain. Haemoptysis is also a frequent occurrence. Such symptoms are often mistaken for tuberculosis, bronchial pneumonia, and chronic non-tuberculous pulmonary infections.

In differential diagnosis, the following conditions are considered in detail. Tuberculosis, mycotic infection, syphilis, and bronchial pneumonia. It is also pointed out that when abscess, bronchiectasis, or empyema occur, these complications, if not closely studied, may be attributed to other causes.

Spontaneous Pneumothorax, J. P. Palmer and R. B. Taft, Journal Amer. Med. Assn., February 28, 1931.

Five cases of spontaneous pneumothorax are reported in patients in whom no pathological change of the lung was demonstrable. All five recovered completely and returned to work. The most common etiological factor responsible for the development of spontaneous pneumothorax, taken as a whole, is tuberculosis. Records show this to be the cause of about 80 to 90 per cent of the adult cases and 40 to 50 per cent of cases in children, the discrepancy being due to the fact that there are more cases in children due to acute infectious diseases. Various ideas have been formulated regarding the etiology of the idiopathic group. Some state that these cases are probably due to a tuberculous infection in which there are no physical signs and no positive roentgen evidence. The theory has also been advanced that a tuberculous process is present and causes the rupture, and that the collapse and rest of the lung allow this process to heal entirely without leaving any scar-formation. Others think the condition due to the rupture of an emphysematous bleb on the margin of the lung. Still others think that probably there has been some inflammatory condition causing adhesions between the visceral and parietal pleurae and the unusual exertion causes this adhesion to be torn loose, thus causing a rupture. This type of case rarely end fatally. The condition often occurs while the patient is at rest or even asleep. The uncomplicated cases usually clear up in from two weeks to two months but may last much longer. One case has been known to exist for twenty years. Recurrence of the pneumothorax is not uncommon. One case is reported in which there were eleven recurrences. In another there were eighteen recurrences during a period of eight years.

UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.
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Chancroid: Its Prevalence; Its Treatment With Vaccines. Pardo-Castello, Havana, Cuba. Archives of Dermatology and Syphilology, August, 1933, Page 154.

The author discusses the prevalence and former method of therapy of chancroid, stating that until a short time ago chancroid was thought to be a strictly local condition, but that lately it has been shown to awaken a general systemic reaction with the possible production of antibodies. Pautrier states that Ducrey's bacillus may exist as a saphrophyte in the genitals of women and acquire pathogenicity under favorable conditions; this explains its more frequent occurrence in men than women. Sailors seem to be the most frequent class of men infected. Nicolle and Durand have prepared a strepto-bacillary emulsion which when 0.2 c.c. is injected intradermally is specific in diagnosis of chancroid. Nicolle and Durand have prepared a pure culture of Ducrey's bacillus, and from this made a vaccine which is given intravenously in increasing dosage: 225,000,000, 335,000,000, 450,000,000 and 675,000 000 organisms per dose. In conclusion the author states that vaccine therapy is indicated in all cases of bubo, phagedena and phimosis with inaccessible chancroids. In uncomplicated chancroid local treatment by means of cauterization with pure phenol and dressing with iodoform powder is usually sufficient. Electrodessication followed by idioform dressings gives good results. In inflammatory cases with secondary infection wet dressings of potassium permanganate or copper sulphate 1-1000 are indicated previous to cauterization; if the lesion fails to heal, vaccine therapy is indicated even in the absence of complications. Patients under treatment for chancroid should be kept ambulatory if possible, in order that their earning power may not be interferred with, but when the vaccine is indicated the loss of work due to the hospitalization is more than amplified by reduced duration of disease.

Therapeutic Efficiency of Bismarsen in Experimental Syphilis in Rabbits. George W. Raiziss and Marie Severac. Philadelphia. Archives of Dermatology and Syphilology, September, 1933, Page 389.

The authors state that bismarsen synthetized by one of them (G.W.R.), in 1924, is the result of an attempt to combine in one molecule two of the best spirochaeticidal elements, bismuth and arsenic. The bismuth content varies from 23 to 25%, the arsenic content from 13 to 15%. As a result of the experiments with serial injections on rabbits, they state it may be concluded that the curative dose in a series of twenty

injections is between 4 and 5 mg. per kilogram, while in a series of ten injections a dose of 10 mg, is definitely curative. The maximum tolerated dose of bismarsen given intramuscularly in albino rats is from 450 to 500 mg. per kilogram. This is an evidence of low toxicity. Fourteen syphilitic rabbits were cured by a single dose of bismarsen as judged by the method of popliteal node transfer. The minimum therapeutic dose was found to be from 10 to 15 mg. per kilogram. When treated by ten weekly or twenty semi-weekly injections of 3 mg. of bismarsen per kilogram, 4 animals were cured and 3 were not; sixteen animals treated with higher doses were all cured. The minimum therapautic dose for a series of from ten to twenty injections was 5 mg. per kilogram, and for a series of ten injections, 10 mg. The minimum effective single dose of arsphenamine for a syphilitic rabbit, when given intravenously was 16 to 18 mg. per kilogram. The same administered intramuscularly was 20 mg. per kilogram. It appears, therefore, that bismarsen is as effective as arsphenamine in experimental syphilis in rabbits.

Studies of Urinary Acidifiers and Antiseptics in Relation to Pyelitis and Cystitis. D. E. Mitchell and J. M. Scott, University of Toronto. British Journal of Urology, September, 1933, Page 225.

This article is a report of clinical studies in urinary antiseptics and acidifiers which have been carried on in the departments of Surgery and Pharmacology, University of Toronto, during the past two years. Seventy to seventy-five cases have been closely investigated. In summary these authors state. (1.) Ammonium chloride, acid ammonium phosphate and benzoate are effective urinary acidifiers, but change of pH has no influence on infection. (2.) Hexylresorcinol, pyridium, hemiltol, have given no evidence of urinary antiseptic value. (3.) Hexamine in well acidified urine cures at least one-third of the cases of non-surgical pyelitis and cystitis. (4.) Hexamine is liberated at the kidney pelvis at least, and is as affective for pyelitis as it is for cystitis. (5.) We have no method for determining which cases will respond. (6.) Resistance to formaldehyde may be due to individual characteristics of the organism. (7.) Focal infection (colonic absorption) seems to have a place in the etiology and treatment of persistent urinary tract infections. (8.) Urinary infection in simple pyelitis of pregnancy persists and only disappears post partum.

Abstractors' Note: This seems to be in contradiction to the present belief of some, first, that some infections of the urinary tract can be overcome or at least benefited materially by varying the hydrogen ion concentration of the urine; Second, that the simple pyelitis of pregnancy can be terminated only with delivery. The subject of urinary antiseptics is in a very chaotic condition.

Spermatogenesis Following Therapy With The Gonad Stimulating Extract From The Urine of Pregnancy. W. L. Brosius and Robert L. Schafer, Detroit. Journal A. M. A., October 14, 1933, Page 1227.

The authors report a case of complete aspermia with bilateral testicular atrophy following orchitis as a complication of mumps, and spermatogenesis repeatedly elicited on the administration of the gonad stimulating extract from the human urine of pregnancy, also aspermia following the removal of treatment. They state that this suggests the gonad stimulating extract from pregnancy urine stimulated spermatogenesis in a human being.

The Prostatic Problem. O. S. Lowsley, New York, N. Y., Journal A. M. A., December 2, 1933, Page 1769.

The author reviews all known methods of handling the prostate surgically, and comes to the following conclusions. Vesical neck resection has a definite place in the armamentarium of the profession for dealing with certain types of enlargements at the vesical orifice. When successful this procedure is economical for the patient and gratifying to the patient. The field for its employment is limited. It is unwise to attempt this procedure on massive adenomatous prostates. It is illogical to remove partially a prostate filled with pus which is being absorbed, because the tubules are sealed off and it becomes a serious focus of infection. He refers to repeated mistakes done in tonsil work in same respect. This procedure is ideal for carcinoma of the prostate, small projections from the floor of the vesical orifice and fibrous bars. It is far from being an office procedure; the avalanche of statistics seem to indicate that many patients are being operated who do not need it. It is just as important to safeguard a patient suitable for vesical neck resection as any other prostatic case. All the usual procedures, preoperative tests and maneuvers for improving the patient's general physical condition should be performed. Vesical neck resection cases are subject to all the complications that occur in a prostatic series. Our mortality rate is 10.11 per cent in eighty-nine cases, or about same as suprapubic prostatectomy.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from LeRoy Long Clinic
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The Treatment of the Bleeding Breast. J. M. Wainwright,, M.D., Scranton, Pa. The American Journal of Cancer. Vol. XIX, No. 2, October, 1933.

This author presents two cases of bleeding from the breast. In one of these a complete mastectomy was done, and though whole sections of the breast were made, only hyperplastic tissue could be discovered. In the other a local area of hyperplastic tissue was removed and the patient subsequently developed a malignancy of the breast.

The object of the contribution is an attempt to prove the theory that the source of bleeding should be removed in all breasts where there is prolonged bleeding, either continuous or intermittent. If a palpable tumor is present, a local excision may suffice. If several tumors or diffuse thickening can be felt, or if no tumors can be demonstrated, the entire breast should be removed. All cases, no matter how treated, should be carefully watched.

He has also studied 400 histories of bleeding from the nipple, and his experience and that of most authors shows that about one-half of the patients who have bleeding from the breast have a malignancy. He points out that many men, such as Adair, Cutler and Bloodgood, feel that transillumination of the breast aids materially in making a diagnosis of duct papilloma. These authors feel that local excision is sufficient in such cases. On the other hand, Sir Lenthal Cheatle contends that the entire breast should be removed in all cases of hemorrhage from the nipple, because one never knows from clinical examination whether there is only one papilloma or many papillomata, or whether or not there is cancer. It may be pointed out, of course, that traumatic hemorrhage

from the breast is to be excluded from this consideration.

The author points out that bleeding is a symptom only, and does not establish in itself a presumption for a diagnosis of a malignant or non-malignant lesion.

He discusses the two situations in which bleeding from the breast will be found.

1. Cases in which there is a definite tumor. He, together with all authors, feels that all such tumors should be removed. He is not entirely convinced that local removal is sufficient in such cases, but the majority of men familiar with this subject think that, after careful examination and the location of only a single tumor. its removal and careful observation is sufficient.

2. Cases in which there is no demonstrable tumor are more difficult in determining the best procedure. He wisely feels in these cases that the entire breast should be removed, as the only proper safeguard.

It is pointed out that bleeding from the nipple is a rather infrequent symptom in malignancy of the breast, and usually arises from a duct papilloma.

—Wendell Long.

The Following Reports Were Made At A Meeting of The French Association For The Study of Cancer On June 19, 1933, Abstracts by A. Civatte, being published in La Presse Medicale, July 29, 1933.

1. Sarcoma of the Breast (Sarcome du sein).

Three cases of giant cell sarcoma of the breast were presented by MM. Hartmann, Th. Bertrand-Fontaine and P. Guerin. These tumors had developed at the sites of preexistant benign tumors. Clinically they were very malignant, recurrence after removal taking place quickly.

From a histologic point of view, some of the interesting findings were multinucleated plasmodia scattered through the sarcomatous breast. In one case there appeared to be an osteoid sarcome with deposits of ossein.

2. Metastases of Latent Tumors after a Traumatism (Metastases de tumeurs latentes apparues apres un traumatisme).

This report is made by MM. R. Huguenin and P. Foulou who had observed two patients where epi theliomata developed at the sites of traumas with haematomata in two and six months, respectively, after the injuries. While the histologic findings were conclusive as to the tumor being metastatic, it was not possible to find the primary growth in either case. The interesting biological query as to how long the local phase of a malignant tumor may last is mentioned. The reporters believe that there are clinical evidences of a state of cancerous "septicemia" before the appearance of metastatic localization.

The report ends with the important statement that trauma in these cases should not be looked upon as a real cause of malignancy, but only as a factor in metastatic localization.

—LeRoy Long.

Prevention of Cancer of the Cervix Uteri. H. S. Crossen, M.D., St. Louis, Mo. American Journal of Obstetrics and Gynecology, November, 1933, Volume XXVI, Page 686.

Dr. Crossen has discussed the history of the diagnosis and treatment of cancer of the cervix, showing the tremendous strides that have been made in the past 40 years, both in the more accurate recognition of the pathology and the more intelligent and effective treatment.

He has pointed out that the progress in the care of this disease has reached a rather stationary level in which the following circumstances are true:

1. Twenty to 25 per cent of the cases seen when treated by more or less standard methods are cured.

2. Early cases of cancer of the cervix limited to the cervix itself have from 80 to 90 per cent cure rate, but they are very rarely seen and constitute such a small number that it very little affects the fact that only 1 out of every 4 or 5 cancers seen are cured.

3. He recognizes that the efforts at early diagnosis have made some improvement, but emphasizes the fact that true early cancer of the cervix is symptomless, and he feels that we can hardly expect great progress in this direction. He considers that the newer methods, such as the colposcope and Lugol's iodin test, are hardly practical in a general utilization. He states very nicely that the first symptoms noticed by the patient do not in reality represent the early stage of the pathological process.

Realizing that the progress in the care of this disease has reached a stationary level in spite of a great deal of work, he feels that the problem lies almost wholly in the field of prevention to be controlled by 2 means; the work of the physician with his patients and the education of the public.

The basis for this preventive work lies solely upon the well known premise that all irritating lesions of the cervix must be properly treated so that they are eradicated rather than palliatively handled. This involves 3 major factors:

1. The thousands of patients who are receiving palliative treatment for chronic irritating lesions in the cervix giving them some symptomatic relief and a false sense of security.

2. Thousands of women who are treating themselves for a "little leucorrhea."

3. Many other women who have chronic irritation in the cervix without symptoms that would cause suspicion of local trouble.

The bulk of the remainder of this paper has to do with the work of the physician with his own patients.

Dr. Crossen emphasizes a feature quite familiar to all who are concerned about this problem; that it is not the specialist's particular concern and duty, but it is a matter where the physician, regardless of location and limitation of facilities, has the power to take an important part.

The details of effective work by the physician include the following:

1. The eradication of chronic inflammatory disease or irritation of the cervix. "Temporizing, palliative treatments do not remove the danger."

2. Patients in whom cervical irritation has cleared under treatment should be occasionally checked up by examination.

3. Patients who come for other conditions should be asked about leucorrhea and other evidences of pelvic disturbance in order that the required examination and treatment may be carried out.

4. Patients who come for other conditions and have no pelvic symptoms present one of the difficult problems in this cancer prevention. He writes rather fully upon this subject emphasizing the responsibility and opportunity that the physician has in tactfully insisting that all women, particularly between 35 and 55, should have vaginal examination in connection with all complaints.

5. How often should the local examination be repeated? He feels that we should concentrate upon a particular age group, certainly that between 35

and 55 being the most important, and that we should not make examinations too frequently so that we receive poor cooperation from the patients, nor too long apart so that we run risks. He, therefore, arbitrarily considered that local examinations should be made once a year.

The matter of education must naturally fall to the lot of organized medical groups and organizations with lay members who have been so helpful in disseminating reliable information on other health matters.

Comment: I am inclined to entirely agree with Dr. Crossen. There is no question that the care of cancer of the cervix has reached a standstill in progress. It is certainly extremely valuable to have proper education and early diagnosis which will be of invaluable aid, but I am afraid that the practical benefits of campaigns for early diagnosis will not be as striking as they theoretically should be. Consequently, some definite organized plan of attack in prevention will probably yield much greater practical benefits than any other course we may take at the present time.

—Wendell Long.

End-Results in Treatment of Pelvic Infection. Albert H. Aldridge, New York, N. Y. American Journal of Obstetrics and Gynecology, Volume XXVI, November, 1933, Page 705.

The author has very carefully collected a series of 1021 admissions to the Woman's Hospital in New York City of pelvic infections. This work was undertaken to determine how successful palliative treatments in these cases had been. The problem was considered from many angles and the data he has obtained is extremely valuable.

For our purposes the conclusions drawn summarize very well the situation as presented by this series of cases:

The author's conclusions follow:

1. Adnexal disease tends to heal spontaneously. There is no means of knowing which cases will heal and which may need operation. All cases should therefore have the benefit of conscientious palliative treatment before operation is considered.

2. In the series of 1021 attacks treated by palliative methods approximately one-half (48 per cent) either healed completely or became free from symptoms so that operation was not necessary. One-third (32.7 per cent) persisted after treatment with symptoms and palpable pathology. Some of these latter patients had to be operated upon as their symptoms could not otherwise be relieved. Approximately one-fifth (19.1 per cent) of the patients treated were never examined after being discharged from the hospital.

3. Operation for salpingitis is recommended in the chronic stage if palliative treatment has failed to relieve symptoms, and for the disability of attacks which tend to recur in spite of treatment.

4. The practice of operating to cure salpingitis in the acute stage of the infection is absolutely condemned. Nearly one-half of such operations are unnecessary, if cases are first treated by palliative means. Furthermore, patients operated upon in the acute stage are subjected to unjustifiable mortality and morbidity, unnecessarily destructive surgery, and to too high a percentage of unsatisfactory end-results.

5. Operations in the chronic stage, even after recurrent attacks of infection, yield end-results which justify the greatest conservatism in the management of salpingitis.

Comment: This article is abstracted because pelvic infections form such a frequent condition to be treated, especially in younger women below 35 years of age. There has been a group of medical thought strongly advocating early operation in all subsiding attacks. There is little doubt in the minds of those who consider the problem seriously and have had large experience that such early operation is not only needless but decidedly unnecessarily destructive. If such operative procedure were entirely curative one would not feel so keenly upon the subject as he does when seeing young women with recurrent attacks of acute oophoritis or other ovarian disease in the single remaining ovary left at operation.

It is the duty of the physician to protect those who consult him, and when these young women present themselves with pain and symptoms their principal desire is to be relieved of the pain and symptoms as quickly as possible with apparent little regard to their future health and happiness. It is our duty to protect them by advising the course which we know to be far the better though not quite so spectacular nor agreeable to the patient who is having symptoms which she wishes to disappear immediately.

One hears it said that if one doctor refuses to operate upon these patients, someone else will do it at the patient's insistence. This has not been my experience, because most patients are cooperative if sufficient care is taken to properly inform them about the situation which they face.

—Wendell Long.

The Prolonged Bath in Therapy (Le Bain Prolonge en Therapeutique) by Robert Clement, La Presse Medicale, October 11, 1933.

According to the author, Hebra, in 1861, noticed that small pox pustules inside the mouth progressed in a more favorable way than those on the skin. He believed it due to protection from contact with the air. Later he employed the prolonged bath in small pox and burns with suppuration. It was his conclusion that prolonged immersion hindered suppuration, relieved pain and made it possible to dispense with frequent dressings. One of his patients, a woman of 38, was continuously in a bath of 30 degrees C. for 504 hours without inconvenience.

The author remarks that the method is apparently not much used in France. He calls particular attention to its use in Vienna where, in connection with one of the large hospitals, there are 23 "beds of water" (lits d'eau). A metalic bed made of non-oxidizable material is placed in a tub which is surrounded by wood. It has a removable wood covering which serves as a table. The temperature of the water is kept at about 29 C. The water is changed entirely twice a day.

The prolonged bath is calmative, but it plays a curative role locally. In certain types of burns and in cases of extensive or multiple suppurating surface areas it prevents the retention of pus, arrests the progress of infection and hastens the elimination of necrotic tissue. Warm water stimulates granulation and favors regeneration of the epidermis. Thick, keloid or vicious scars are exceptional. But, above all, the bed of water (lit d'eau) assuages pain, facilitates change of position and abolishes complicated and painful dressings.

Prolonged balneation is sometimes employed in extensive and rebellious diseases of the skin, such as selected cases of pemphigus, suppurative dermatitis, pityriasis rubra of Hebra, arsenical dermatitis,

the accidents of curietherapy, and empetigo herpetiformis.

In surgery it may be of service in infected wounds after incision and drainage; in cancer with extensive surface sloughing; in stercoral fistulae, decubitus sores, fistulae of the urinary tract. Certain cases of polyarthritis seem to be relieved a great deal by prolonged warm balneation.

The contraindications are cardiac decompensation, pulmonary affections, and probably diseases of the kidneys.

Comments: Through the courtesy of Prof. Von Eiselsberg, I accompanied him on an inspection of the department of prolonged balneation at the Algemeine Krankenhaus, Vienna, several years ago. As indicated in this article, the use of non-oxidizable material in the construction of the tubs was emphasized.

The water supply was accurately regulated as to temperature and flow, and it was flowing into and out of the tub all the time in a very gentle stream. **The patient was not permitted to stay in still water,** one of the chief reasons for which, as explained by Von Eiselsberg, was that without continual inflow and outflow the temperature could not be kept uniform—a matter of the most profound importance. There must be a continual supply of water at exactly the proper temperature; otherwise the treatment is cruel, useless, harmful. The prolonged bath in Vienna (and this article is based upon observations there) is not employed generally in the treatment of burns. It is reserved for those cases in which there is extensive necrosis.

In short, the treatment as it is employed in Vienna is limited to patients definitely and carefully selected. In connection with a great hospital of several thousand beds there were, at the time the article from which this abstract is made was written, only 23 of these tubs or "lits d'eau." This alone makes it quite apparent that the use of the method is strictly limited.

—LeRoy Long.

Lipomata of the Labium Majus (Les Lipomes de la Grande Levre) by H. Mondor and A. Sicard, La Presse Medicale, September 30, 1933.

Since the labium majus and the mons veniris, which is a prolongation of it above, is rich in adipose tissue, it is astonishing that lipoma in this region is extremely rare.

Grosch, in 1887, found records of only three lipomata in 631 tumors of the mons veneris — about 0.47%—and 12 lipomata in 716 tumors of the labium majus—1.67%.

Kelly in 1894, was able to find records of only 20 cases of lipoma of the labium majus in all the literature, of which he furnished one.

Urich, in 1925, could not find any additional cases after Kelly's report, but the authors find that Ducuing, a few years before, reported a case of bilateral lipomata apparently arising from the fatty material about the round ligaments, descending into the inguinal regions of the labia majora, in a child of five years. He reported the pathology as congenital.

Added to this peculiar (and questionable) case are two by Sturmdorf, one by J. B. Murphy, two by W. H. Condit, one by F. de Gironcoli, making a total of 27 cases reported. To this number the authors add one more and give the case report.

An Armenian woman in good health and without any unusual antecedent history noticed, four years before examination, a small tumor in lower left pubic region. It had grown slowly but progressively. It caused neither pain nor inconvenience, but was a little sensitive during the menstrual period.

At examination, there was a tumor occupying the left side of the mons veneris and the superior 2-3 of the left labium majus. It was slightly constricted about mid-portion, painless, well limited, flat on percussion, lobulated, soft. Its upper limits were near external inguinal ring, but there was no impulse on coughing. Its position could not be changed by manipulation. It was enucleated without difficulty. The pathologist, Madame P. Gauthier-Villars, reported it to be a pure lipoma.

These rare lipomata (in location) may be small or large, and may occupy any part of the labium majus. Schullein reports a case where the fatty mass extended into perineum and about the anus; Bruntzel a case where fatty infiltration about the vagina interferred with labor.

Sometimes they are of enormous size, one being as large as the adult head; another, reported by Capele, advanced into the perineum, destroyed it and then continued until it hung in front of the knees. Stiegel removed one at operation that weighed 10 pounds and Balls-Headly one that weighed 24 pounds.

Of the 27 reported cases, 8 were pediculated. The pedicle may be attached about the margins of the external inguinal ring, or about the mid-portion of labium majus. It appears that the enormous pendant tumors are pediculated (William Goodell, Emmet, Thompson).

From a histologic point of view, the tissue is adipose, sometimes traversed by trusses of heavy connective tissue and by fibrous tracts which explain the considerable weight of some of these tumors.

The youngest patient in the collected cases was 5 years of age; the oldest 61.

The diagnosis has not been made without difficulty. Kelly confused his case with a hernia at first; Balls-Headly thought at first of a cyst of Bartholin's gland. The most frequent error is to think of a cyst arising from the canal of Nuck.

—LeRoy Long.

Combination of Vaccinotherapy and Serotherapy in the Preventive Treatment of Tetanus (Combinaison de la Vaccinatherapie a la Serotherapy dans le Traitement Preventif du Tetanos) by Madame Charles Clavel and Charles Clavel, Lyon, La Presse Medicale, November 1, 1933.

The authors apparently represent the conclusions in the Surgical Clinic of Prof. Tixier and the Bacteriological Institute of Lyon, they being associated with these important organizations.

They present proof that the average preventive dose of anti-tetanus serum is not always sufficient protection, and that, in any case, it protects for but a short time.

It is advised to administer both serum and vaccine, but never mixed together, or by use of same syringe.

The vaccine is designated as anatoxine. In the average patient ½ c.c. is injected. Ten days later 1 c.c. and in a month 2 c.c.

Raymon and Zoetter are quoted to the effect that in this way an active immunity for 4 or 5 years may be established, and at the same time not run any risks of anaphylactic phenomena sometimes present after subsequent injections of serum. They wish it understood that serum is advised early, the vaccine being an auxiliary therapy.

—LeRoy Long.

ORTHOPAEDIC SURGERY

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End-To-End Approximation and Accurate Reduction As A Necessity In Fracture Therapy. Walter W. Ebeling. Amer. Journ. Surg. XVIII, 272, 1932.

The author discusses several interesting points which are worth considering, including the aims in fracture therapy, method of attaining accurate reduction, and a timely discussion of the satisfaction of the patient; also the criteria for sufficient reduction and the exceptions which may be met with, especially in the younger, and the necessity for accurate reduction, especially when the fracture is near or adjacent to a joint.

The author also emphasized the fact that the operating room is the place for the care of fractures, stresses the rigid asepsis, and approves of the Lane-plate technique.

The difficulty of the standardization and treatment of fractures is also discussed and the individualization of each fracture from the standpoint of the patient and his occupation, the age of the patient, the procedure indicated in reduction, type of fixation, the importance of after-treatment, and the consideration of the surgeon as an individual.

Reconstruction-Arthroplasty Operation For The Hip. Samuel Kleinberg. Amer. Surg. XVIII, 64, 1932.

The author describes an operation for reconstruction of the hip which is well conceived, practical, and a distinct advance in the treatment of the type of hip for which ordinary reconstruction operation has been done.

The operation consists of an osteotomy in the vicinity of the joint line and dislocation of the upper extremity of the femur which was then remodeled into a head and neck, the acetabulum having been cleaned out and enlarged by a reamer. Arthroplasty is then done after the manner of Campbell.

The advantages claimed for the operation are:

1. The pain is reduced to a minimum because of the smoothness of the new head and the covering with a double layer of fascia.

2. The use of the fascia assures a fairly extensive range of motion in the hip joint and the stability of the hip post-operatively is satisfactory.

Seven case reports with X-rays are included. These consist of three cases of ununited fracture of the hip, two cases of hypotrophic osteoarthritis of the hip, and two cases of ankylosis of the hip. Further cases and later end results would be valuable and interesting.

The Treatment of Compound Fractures. (A Specific Technique for the Prevention and Control of Osteomyelitis). By Fraser B. Gurd, B.A., M.D., F. A.C.S., Montreal, Canada. Journal of Bone and Joint Surgery, April, 1933. Vol. XV. No. 2. Page 327.

The author of this article has four years been writing on the subject of infections, particularly as they relate to compound fractures. His experience dates back to the time of the World war, when he was associated with Sir Robert Jones, on experimental study of wounded soldiers suffering from compound fractures. His results were previously published in 1918. He found that when he returned to treating civilian injuries that he could apply very definite technique for the treatment of severe compound fractures and I think his results have been more favorable than the results in cases treated by other techniques in different clinics. For the prevention and elimination of infection and cellulitis, he employs the following techniques:

I. Avoidance of suitable pabulum for bacterial growth.

(a.) Excision of devitalized tissue.
(b.) Prevention of accumulation of inert exudate and blood.

II. Maintenance of circulation.

(a.) Avoidance of interstitial tension.
(1.) Incision of skin and fascia.
(2.) Evacuation of exudate and transudate.
(a.) Obliteration of dead spaces.
(b.) Curtain drainage.
(3.) Prevention of adhesion of opposing wound surfaces—delay in sealing of wound.

(b.) Rest—fixation.
(1.) Plaster-of-paris.
(2.) Splints.
(3.) Traction.
(c.) Posture—gravity to assist venous and lymphatic drainage.

III. Chemical inhibition of bacterial growth.

(a.) Saprophytic bacteria.
(1.) Iodoform.
(2.) Bismuth.

(b.) Pathogenic bacteria.
(1.) Idoform.
(2.) Bismuth.

IV. Stimulation of tissue reaction—serous and cellular.

(a.) Iodoform.
(b.) Bismuth.
(c.) Liquid paraffin.

He does not hesitate to treat the mutilated extremity while the patient is being treated for shock. He uses novocain or avertin to fortify gas oxygen anesthetic, if necessary. The leg is cleansed with soap and water, then shaved and further cleansed with petrolic ether and well dried before the use of alcohol. He sterilizes the skin with iodine. The edges of the contaminated and crushed skin are excised; the underlying tissues are exposed and the debris cleansed from the deep part of the wound; incompletely separated bone fragments, large or small, which show any attachment to any tissue whatever are allowed to remain in place. The surface of grossly contaminated fragments is removed by means of the rongeur. Bleeding points are clamped and ligated and the wound as a whole is made more or less saucer-shaped or funnel-shaped in appearance. through the complete excision of traumatized tissue. Fractured bone ends are brought together, nerves sutured if severed and tendon ends approximated. The whole wound is then thoroughly washed with normal saline solution; the surface is dried and bathed in alcohol in order that the surface tissues may be dehydrated. With dry sponges the alcohol is removed and a paste which he calls Bipp, consisting of bismuth, iodoform and paraffin is applied.

(Note: Bipp or Morrison's paste was very popular in the British army service. Bismuth subnitrate 1 part, powdered iodoform 2 parts, and liquid paraffin 1 part). All parts of the wound are carefully reached and the bipp is wiped out, leaving no masses of the paste. Wide soft wiping gauze is soaked in liquid paraffin and a small amount of bipp is rubbed into it. This gauze is carefully and firmly packed into the wound, care being taken to fill all crevices and small cavities in the deeper parts of the wound. A few silkworm gut sutures are employed to partially approximate the skin edges. If traction is desired on the bone this is applied previous to the operation just described. He uses a wire through the os calcis or a Delbert sling. A thin layer of padding is applied from the toes to about the junction of the middle and upper thirds of the thigh and a circular plaster bandage is applied. Antitetanic serum is administered. The foot is elevated in bed about 8 inches. The cast may become discolored but unless the temperature goes above 103 degrees it is not opened. He never opens a window but if the wound must be inspected, he splits the cast on either side and removes the top portion. If no complications occur he inspects the wound for the first time at about eighteen days. Bone fragments which are devoid of granulations are removed. If packing has been adequate no purulent exudate will be found. The wound is again cleaned, bipp is carefully rubbed on the surface and it is packed with gauze as before and plaster-of-paris again is applied. This process is repeated until granulations completely fill the wound. He has not seen any poisoning from the iodoform except in cases where the size of the wound was more than 144 square inches.

AUTOPSY PROBLEM: ITS SOLUTION IN SMALLER COMMUNITIES

George W. Covey, Lincoln, Neb. (Journal A. M. A., Oct. 14, 1933), discusses the means by which a moderate sized city, without a medical school, can overcome the obstacles of not having a laboratory for the performing of necropsies. The method principally consists of sharing the expense for the maintenance of such a laboratory by the city hospitals. The author states that Lincoln physicians have by the method outlined developed such an interest in necropsies that over a period of fifty-three months they have done 657 necropsies with complete records, examined and recorded the histopathologic observations, and properly correlated the clinical and pathologic observations in a large number of them as a staff function of the hospitals. This constitutes a necropsy percentage of 15.5 on all deaths in the city for this period, which is over eight times the general average in the United States. The author concludes that there is great need of increasing the number of well done and well studied necropsies, especially in the smaller communities. To do this the medical profession must be made necropsy conscious and the necropsy must be made interesting and profitable to the physician. The cooperation of the mortician is necessary; it can be had and it is invaluable. A plan such as the one adopted in Lincoln is workable and could be adapted to almost any community.

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